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## THE RUBBER-RECLAIMING INDUSTRY.

FOR some time past developments in the industry of recovering old rubber for manufacturing purposes have been growing more and more interesting, and just at present there is an accumulation of evidence on the horizon which points to a rising storm.

The United States Rubber Co., which is unquestionably the most formidable aggregation of capital and influence in the rubber trade, has finally completed the large and substantial brick plant at Naugatuck, Conn., which was begun more than a year ago. At the time when the order for the machinery was given it was definitely understood in the trade that the old management designed it to be a plant for the production of recovered rubber to meet the requirements of the large number of extensive manufacturing plants controlled by the United States company. What the new management as represented by President Banigan may decide with regard to it has not been made public. At all events, if the factories under his control need such a plant he will not hesitate to utilize it, any more than he hesitated about installing an acid reclaiming plant for the use of the Woonsocket factories some years ago.

We learn, from reliable sources of information, that two prominent New Jersey firms are seriously considering the idea of establishing like plants to yield the product which is required in their own factories, and that one of the leading mechanical-goods concerns in Boston has lately gone so far as to get estimates showing the cost of mechanical equipment for a similar plant for its purposes. During the past year, also, the Canadian Rubber Co., at Montreal, has built and equipped a recovering plant which is now in operation, supplying its requirements.

These facts, coupled with the suits and counter-suits which have been brought by the various firms and companies now controlled by the Rubber Reclaiming Co., together with the well-known and bitter internal disagreements in that company, all point unmistakably to a condition of affairs which promises early and interesting developments in the great struggle which the Rubber Reclaiming Co., controlling the Chemical Rubber Co.'s patents, must make to sustain their claim as the exclusive patentees in the production of reclaimed rubber by the acid process. And not the least interesting phase of the present situation is the fact that these newer developments are all to be added to a very formidable array of individuals and firms who are already enjoying what they claim to be their right to manufacture reclaimed rubber by the acid process, "the patents aforesaid to the contrary notwithstanding," as the lawyers would put it. Among the oldest of these is the E. H. Clapp Rubber Co., of Boston. Mr. E. H. Clapp, the founder of this widely known and highly reputable firm, was the pioneer in the business; and for many years the house has not only enjoyed a large and excellent trade, but they have never been sued by the Chemical Rubber Co. to enjoin their operations. In addition, there are the Raymond Rubber Co., operating the Bloomingdale Soft Rubber Works at Bloomingdale, N. J., against whom the Chemical Rubber Co. has brought suit,

but who nevertheless continue to supply a large growing trade; Mr. J. B. Wilson, operating the Housatonic Rubber Co., at Bridgeport, Conn., who has never been disturbed; and Mr. J. B. Romaine, Rochelle Park, N. J., who for years past has been in active operation. All these firms and individuals manufacture for the definite purpose of selling to the trade exclusively, and of course they are all direct competitors of the Rubber Reclaiming Co. Beyond these, the following firms have for some time past been manufacturing the recovered product required for their own mills: The Gutta Percha and Rubber Manufacturing Co., New York; Goodyear Metallic Rubber Shoe Co., Naugatuck, Conn.; Trenton Rubber Co., Trenton, N. J. (manufacturing for themselves, the Empire Rubber Co., and Eastern Rubber Manufacturing Co., also of Trenton); the Woonsocket Rubber Co., of Woonsocket, R. I.; and the B. F. Goodrich Co., Akron, Ohio. There are also several other prominent concerns who claim to manufacture for their own use by the mechanical process, as against the acid process for which the patentees claim exclusive right.

As is well known, suit has been brought in the United States District Court by the Chemical Rubber Co., who are represented in the trade by the Rubber Reclaiming Co., to enjoin the Goodyear's Metallic Rubber Shoe Co. and the Raymond Rubber Co. from manufacturing by the acid process, and for a long time past the attorneys have been engaged in taking testimony preparatory to submitting the issue, in the form of a brief, to the United States Courts in the Districts of Connecticut and New Jersey. The testimony for the defense in the Goodyear case has been completed and we have been enabled in recent issues of THE INDIA RUBBER WORLD to present an outline and extracts indicating the grounds upon which the defendants maintain their right to manufacture. The attorneys are now cross-examining the principal witnesses for the complainants, but when the case will go to trial there is no saying. Meanwhile, for reasons which the complainants deem sufficient, we have not been permitted access to the testimony for complainants thus far taken, and we are not, therefore, able to give such outline or extracts as would be interesting and valuable to the trade. We trust, however, that this objection may be removed, so that we may present the features of this testimony, and thus prepare our readers to clearly comprehend the decision of the judge when it is rendered.

With singular fondness for secrecy, the officers of the Rubber Reclaiming Co. have shown the most determined opposition to any discussion of the case in our pages. We feel, however, that such objection is groundless, for manifestly the issue is one which must come up for determination by a judge skilled in the law of evidence; and hence our advance publication of such facts as can be gleaned from the testimony that has been taken can serve no other purpose than simply to inform the trade as to the character of the issue, and enable manufacturers in all lines to judge of the possible and probable effects upon the price of this staple article in case the decision goes for or against the patentees. In short, the day has gone by when the rubber business de-

pends upon secrecy for its successful conduct. The industry is so large, and the demand for information of a general and legitimate character is so constant, that it must be met by the journals which pretend to meet the requirements, or they had better retire from business.

The fact is that recovered rubber constitutes a large proportion of the essential raw material which enters into rubber goods of all classes. For every pound of crude rubber used, there is another pound of reclaimed rubber used also; and the processes of manufacture have advanced to such a stage that the reclaimed product serves the purpose even better, under existing methods of manufacture and in view of the market demand, than though goods were made wholly of crude rubber. In short, recovered rubber is a staple product, and its cheapness and excellence are at the very basis of prosperity in rubber-manufacture. If the company who claim exclusive patents for its production have a just right to enjoy the fruits of those patents, we should be the last to say them nay. We should in fact take the position that they have conferred a lasting benefit upon both rubber-manufacturers and rubber-consumers, and it is only the part of fairness that they should be rewarded under the spirit and letter of our patent laws. On the other hand, if the many reputable and influential concerns who contest the validity of their patents are right in their position, there can be no doubt that an increase in the number of manufacturers, with their consequent rivalry and competition for business, would bring about a decrease of price upon the one hand and an inevitable improvement in quality on the other, thus conferring lasting benefits to the whole rubber industry. For every pound of chemically-prepared recovered rubber that goes into manufactures to-day feels the influence of the restriction which is put upon its manufacture by the injunction suits which have been brought, and by the fear of interference which such injunction suits arouse. Under such circumstances it will be not only a welcome, but a good thing, when the issue is finally decided, and the trade may be done with the uncertainty and delay which lawsuits entail. In this suit, for example, the original action was brought in September, 1888, so that the litigation is now drearily counting off its sixth year, with the end still in the dim distance.

BOSTON *Boot and Shoe Recorder* says: "Some will, no doubt, point to the aggregate amount paid out for dividends by the United States Rubber Co. as an example of the tribute wrung from the people by a monopoly. It must be remembered, however, that the same amount looks very much larger when collected into one sum than when divided up between fourteen different companies. No objection would be made if each separate company reported a dividend of \$200,000 to \$300,000, but if a total is given at \$2,800,000 to \$4,200,000, the anti-monopoly shouters can hold up their hands in horror, although the amount is the same in both cases."

THE second price-list of the wires and cables manufactured by the Indiana Rubber and Insulated Wire Co. (Marion, Ind.) has been received. They are the only manufacturers of "Paranite" wires and cables for aerial, submarine, and underground use. The factory is at Jonesboro, Ind., in the natural-gas district.

## THE EDITOR AND THE GOSSIP.

"THE successful commercial traveler is an optimist always," said the Editor, as he seated himself opposite the Gossip, "and his belief in the special excellence of his goods is marvelous."

"Does a story go with that wise observation?" inquired the listener, with languid interest.

"Just an incident, brief, to the point, and as follows: Some years ago S. D. Davenport, who travels from St. Louis with mackintoshes and rubber clothing, stopped a few days in Leadville. While there he became acquainted with a foreman in one of the mines. In the course of a pleasant conversation the latter remarked upon the number of rubber coats worn by the miners. This at once fired the ambition of the salesman, who began to sing the praises of his rubber coats for that and every other service. The foreman, however, was in doubt, and told the enthusiast that a special coat made for miners alone was what was used, and that unless he had such garments he had better not try for that trade. His cautions went unheeded, and Mr. Davenport brought out a handsome, strongly-made fireman's coat and said: 'Wear that the rest of the week, and if it does not stand the racket I will make you a present of it.' The foreman acquiesced, simply asking the donor to be at the mouth of the pit at 5 o'clock the following evening when he came out. 'I was there,' remarked Mr. Davenport, 'and at 5 my man stepped out of the cage. He had on my coat and I wish you could have seen it. The rubber had peeled from the cloth in patches a foot square, the cement in the seams had let go as if made of flour paste, the pockets were torn out, one sleeve was gone, and wherever a single drop of that alkaline water (falling a thousand feet or more) had struck the rubber surface there was a blister as a big as a cent. The coat was a wreck. I owned right up, of course, and then I asked the foreman to show me a coat that would stand mine-work. He called up a friend and then and there I made the acquaintance of Hodgman's 'miners coat.' It was built for the business and by a man who knew how, and it hadn't a tear or a blister on its whole surface, although it had been used daily in the mine for a long time. I took my hat off to it, and to-day if any one wants me to sell a miner's coat I just acknowledge that I'm not in it, and refer them to the Hodgman company."

\* \* \*

"YOUR stories," criticised the Gossip, "have a sort of commercial flavor to them that should not enter Bohemia. Let me tell one that relates to the rubber trade without touching upon buying or selling."

"Go on."

"You doubtless know E. H. Paine, sales-agent of the American Rubber Co.? Yes? I thought so. Well, about a year ago, during the fishing season, he found himself in Michigan, far up on the peninsula, near a place which I believe he called Hellangone, although I am not positive as to that. He and his companions started out into the wilderness for trout. They had all of the latest fads in the way of jointed rods, fancy flies, and snake-bend hooks,

but no matter what waters they tried no trout did they catch. Finally, weary and disgusted, they sat down by a brookside to rest. While there a crackling of the underbrush attracted their attention and into the little clearing before them stepped a tattered, unkempt man of about sixty. He too was a fisherman, apparently, for he had a crooked stick in his hand from which dangled a piece of knotted twine that ended in a rusty hook. At first there was a disposition on the part of the boys to guy him, but before it had fairly begun Mr. Paine had given him a cigar, seated him on a spare ant's nest and was engaged in pleasant converse about the weather and the fishing."

"A Paine-ful position," suggested the Editor.

"At first the old man was suspicious and resented the cordiality of the sales-agent and the ants, but the gift of a new fish-line and some hooks won his heart and he confided to his new friend that he knew of a place where they could get all the 'traout they could lug,' and after a short parley they agreed to go with him.

"The only way to travel that wilderness and not get hopelessly lost was to follow the brook. That they did. Through swamps and tangled thickets, stumbling, plunging, panting, sweat-sweating, they toiled until they were weary of life and were sullenly preparing to lynch their guide, when they emerged into a clearing where the beavers had dammed the brook. In the pond thus formed were thousands of trout, big fellows—"

"The damming of the beavers was more effective than that of the fishermen," soliloquized the Editor.

"The moral of this tale," continued the Gossip, "is that the true fisherman has tact and persistence. If Mr. Paine had guyed the guide—"

"Guyed the guide—beautiful!" commented the other.

"If Mr. Paine had *hector*ed the guide, or if he had refused to follow him to the finish, he would not have brought out the fine string of trout that was actually 'all he could lug.'"

\* \* \*

"I AM fond of fishing," mused the Editor, "and I dearly love a good fish story. Now that we are on the subject I think I will tell one."

"I always enjoy your converse," was the polite reply.

"You are unwittingly witty," said the Editor, "for this story concerns a Converse—Captain Harry, the assistant treasurer of the Boston Rubber Shoe Co. (with the accent on the *shoe*). It seems that one season he was at a shore resort near Boston, and the result of a morning's fishing was an unusually large catch of smelt. They were beauties, too, and in the generosity of his heart it occurred to him that it would be an act of filial piety to send some home. To think was to act, and the next express bore a neatly-packed box of glistening trophies to the home of his parents. Now it happened that on that very day Mrs. Converse, who was expecting another box, directed a servant to take it on arrival to a certain closet and leave it there unopened. When, therefore, the Captain's present arrived the servant secured it, bore it to the place designated, and went her way. A couple of weeks after this Mrs. Converse complained to her spouse that their home was pervaded by



a strange, unwholesome smell. Mr. Converse replied 'rats!'

"Horribly slangy," murmured the Gossip.

"I mean," said the Editor, with dignity, "that he suggested that it was caused by rats that had had the impudence to die within the walls. He acknowledged that it was mortifying."

"The rat, of course," interrupted the Gossip.

"And said that he would have the plumbers around at once to hunt for the defunct rodent. They came—they sounded walls, tore up floors, searched spaces behind chimneys, and finally one picked up the Captain's box to move it out of the way—and discovered the cause of the odor."

#### A QUESTION OF CREDIT.

SCENE—Office of the Editor of the *British Rubber Review and Balata Trades Journal*.

SUB-EDITOR—How about next month's paper, sir? We have nothing planned.

EDITOR—We will discuss that in a moment. Read this item that I have just written.

SUB-EDITOR (*reading*)—"I am glad to note that the United States has a rubber journal. It is really quite a creditable affair. Welcome, little cousin."—Very nice of you, sir. They will feel much flattered, I'm sure. But about next month's paper? We shall soon want the matter for the printers.

EDITOR—Let me see. Suppose we print a couple of pages of "American Rubber Notes?"

SUB-EDITOR (*bewildered*)—But we have no correspondent in America, sir!

EDITOR (*tearing out two pages from THE INDIA RUBBER WORLD*)—Make them up from this.

SUB-EDITOR—Shall I give credit, sir?

EDITOR—Certainly; say "Gleaned from various sources." Then get up a page or two on the tariff bill now before the American House of Commons.

SUB-EDITOR (*in despair*)—But how will I ever get the blooming stuff?

EDITOR (*tearing three pages out of THE INDIA RUBBER WORLD*)—Reprint these interviews with American manufacturers (beastly impudence these Yankee journalists have to bother busy men for opinions to put in their papers). Add a note saying that we should be pleased to hear from our own manufacturers on this interesting topic.

SUB-EDITOR—Shall I give credit, sir?

EDITOR—Certainly; say "From our New York contemporary." Then prepare an article on the state of affairs in Brazil.

SUB-EDITOR—Where shall I get the matter?

EDITOR (*tearing four pages out of THE INDIA RUBBER WORLD*)—Make it up from this.

SUB-EDITOR—Shall I give credit for that?

EDITOR (*testily*)—Of course; say "From an American journal in our trade."

SUB-EDITOR—How about "fillers"?

EDITOR—Look over the fires and deaths in our daily newspapers, and (*handing out the remainder of THE INDIA RUBBER WORLD*) make the rest up from this.

SUB-EDITOR (*apprehensively*)—Won't this American paper steal—I mean crib—from us in revenge?

EDITOR (*triumphantly*)—That is just where we have them! What is there to steal? No interviews, no trade-notes, no new goods, no new ideas.

SUB-EDITOR—Yes, sir, I see. By the way, why don't you advertise your paper in theirs?

EDITOR (*horrified*)—Advertise in that paper! Why, pray?

SUB-EDITOR—Because, sir, it may be that they ain't doing very well financially, and if they were to fail, and stop publishing, it would be an awful blow to us.

#### LETTERS TO THE EDITOR.

TO THE EDITOR OF THE INDIA RUBBER WORLD: Will you kindly inform me where we can obtain blackboard-pointer tips? These are conical pieces of rubber about one inch more or less in length, with a hole in the large end, into which a wooden pointer is thrust, thus making a noiseless pointer that will not scratch the board.

WILLIAM G. JOHNSON & CO.

Pittsburgh, Pa., January 17, 1894.

#### BOTH CULTIVATION AND NEW FIELDS NEEDED.

TO THE EDITOR OF THE INDIA RUBBER WORLD: Your recent interviews with rubber dealers on cultivation are good, but only interesting as an expression of the opinions of persons who do not know anything about the conditions and who are satisfied with their present. Rubber will not last if the demand keeps on increasing, and both cultivation and new fields are a necessity for the near future.

J. ORTON KERBEY.

Washington, D. C., January 25, 1894.

#### WHO MAKES RUBBER PATTERNS?

TO THE EDITOR OF THE INDIA RUBBER WORLD: Would you kindly inform me if you are aware of the existence of a company styled the Vulcanized Rubber Patterns Co. of New York, or know of a company or any one manufacturing rubber patterns? I desire this information to reply to a correspondent, and I know you always keep posted on these matters.

JOHN T. USHER.

New York, January 10, 1894.

#### ENCOURAGING WORDS FROM BOSTON.

TO THE EDITOR OF THE INDIA RUBBER WORLD: Please let us know when our subscription to THE INDIA RUBBER WORLD expires. We would not like to be without it. It seems to be better with each number, the last one being especially good, containing many things of special interest to the rubber trade.

CLIFTON MANUFACTURING CO.

Boston, January 23, 1894.

#### HYPOSULPHITE OF LEAD.

TO THE EDITOR OF THE INDIA RUBBER WORLD: Referring to the inquiry of "G. F." in a recent number of your journal, we beg to state that we have for many years made hyposulphite of lead, or "black hypo," of the finest quality, especially suitable for India-rubber manufacturers, always of uniform composition and percentage of free sulphur. We shall be pleased to send sample and quotation if desired, and would mention that we make specialties of all pigments, etc., for use with India rubber, such as golden sulphuret of antimony and India-rubber substitute of all grades.

TYPKE & KING.

London, England, November 27, 1893.

A PROMINENT rubber-man, speaking of the Hall patent on rubber-lined boots, says: "When I was a boy the New Brunswick Rubber Co. used to make net-lined rubber boots, and a very large percentage of them were really friction-lined, because the rubber during vulcanization worked between the meshes of the net. Our house condemned these boots because then we did not want a fusion-lined boot, but it simply goes to prove that as far as the manufacture is concerned it was not a new thing."



## A GERMAN HARD-RUBBER FACTORY AND ITS OWNER.

*Dr. H. Traun's Harburg Rubber Comb Co.*

THERE are several hard rubber factories in Germany, the largest of which is the Harburg Rubber Comb Co. (Dr. H. Traun, proprietor), with factories at Hamburg and Harburg a/ Elbe, Germany. In order to obtain some facts regarding this important concern THE INDIA RUBBER WORLD has interviewed Mr. Otto Traun, a son of the proprietor, who is now in New York city occupying a position in the offices of Charles R. Flint & Co.

"The Harburg Rubber Comb Co.," said Mr. Traun, "under its present name and as an independent concern, was established in 1851, but its real origin dates back to 1818, when it was a branch of the firm of H. C. Meyer, Jr., of Hamburg. In 1856 Dr. Meyer returned from New York and began to introduce the invention of Charles Good-year. But the success of the hard-rubber business was mainly the result of the invention of Mr. L. Otto P. Meyer, cousin of Dr. Meyer, who found that it was possible to give a brilliant black surface to the rubber by covering it with tin sheets. This is the way in which many articles are manipulated even to day. From that time rubber combs have been a well-known article in the trade, and one after another other things have been made of hard-rubber. Owing to that invention and intelligent management the Harburg Rubber Co. has been able to keep its leading position in the trade in spite of the constantly increasing number of hard-rubber factories. The business of the firm is increasing steadily, chiefly through the general application of electricity. It manufactures combs, insulating materials, tubes, bars, surgical supplies, dental rubber, hair-pins, match-boxes, smokers' supplies, and a variety of other things. Every day new uses are discovered for hard rubber.

"Dr. Heinrich Traun, my father, who joined the firm in 1863, has recently patented a process for giving an olive color to hard-rubber articles. Red, white, black, and brown colors are the only ones known in the trade generally. Dr. Traun has other inventions which give him an advantage over others. Such an invention allows him to keep nine-

tenths of the trade in pipe-stems or mouthpieces, of which he manufactures a million a week. They are sold chiefly in France and England, the countries of the pipe.

"The Harburg Rubber Comb Co. has two factories, one in Harburg, the other in Hamburg, but business has decreased somewhat since the cholera panic in Hamburg. Nobody wanted to touch goods coming from Hamburg. The company sends penholders and match-boxes to Japan to be decorated or painted by the unique Japanese artists. These fancy articles are very expensive when they are returned from Japan and put upon the market. The lowest priced sells for three marks, while there are some selling for twenty marks.



DR. HEINRICH TRAUN.

"The Harburg Rubber Comb Co. has houses and agencies in every capital of Europe and other large cities. In New York the general agents of the firm are Schrader & Ehlers, No. 335 Broadway. But the firm's business in this country is not very large, owing to the relatively high tariff on hard-rubber goods in general and the prohibitive rate on smoker's supplies in particular. The company used to do a big business in Russia but the excessively high tariff imposed makes competition with the goods of the Russian-American Rubber Co. impossible. That company controls the Russian market so far as combs and hard-rubber goods are concerned, though it does not sell these goods outside of Russia. The chief items exported by the Harburg Rubber Comb Co. to this country are combs, hair-pins, and dental rubber.

"The firm next in importance is the New York-Hamburg Rubber Co., which was originally an outgrowth, if not an actual branch, of the India Rubber Comb Co., of New York. The chief workmen, the knowledge, the skill, all were supplied by the latter. The firm in question employs about 400 men, and manufactures the same class of articles as the Harburg Rubber Comb Co. Other hard-rubber factories are those of the Mannheimer Rubber Co.; the Hanover Comb Co., which employs about 250 men (this concern also manufactures soft rubber goods, especially cheap

articles, which it sells in France); the Clouth firm of Cologne, and some minor companies. One factory in Munich (Metzler) makes electrical supplies and fancy goods, employing a large number of hands. But the most important factory in the line of fancy goods is Dobler in Berlin. That concern deals in fancy articles almost exclusively, and does nearly the whole of that business in Germany. It is impossible to compete with it. Their articles are most beautiful. They make finger-rings, brooches, ear-rings, and all such articles. A good deal of the product is exported to India, Africa, and other places. The savages afford a great demand for them. They are generally decorated. The firm also manufactures umbrella-handles.

"Of course Germany imports no hard rubber. The largest and most successful companies are in Germany, the reason being that the patents which established that business lasted till 1876. But patents are not everything, nor even the chief thing. Large capital and highly-skilled labor are needed for hard-rubber manufacture, and no small factory can possibly succeed. There are thousands of little machines and special contrivances in use, every new article requiring new machinery. There are about 5000 different articles made by the hard-rubber manufacturers, so it is easy to see how difficult it is for small factories to succeed. Then the chief item of cost is wages. Workmen have to be trained for the work, and every firm tries to keep its men. Foremen and others are bound by contract, and in Germany it is easier to enforce observance of contracts than here. Sometimes part of the wages is withheld as a guarantee. But of course it is impossible to prevent desertions altogether. Most of the skilled men in the other factories have in fact graduated from Dr. Traun's establishment.

"The German hard-rubber manufacturers do not rely on the patent system. They believe, rather, in keeping trade secrets and preventing the publication of their special devices and processes. To apply for a patent is to publish your invention and open the door wide to fraud. It is better to say nothing and reap the advantage of one's improvement as long as the competitors remain ignorant of its nature. It takes years sometimes to find out just what a competitor has hit upon. But we have in Germany what is called 'Muster-schutz,' or protection to shapes and forms, which is given to every applicant for the period of three years. Of this all avail themselves, and it accomplishes its object. Suppose one manufacturer devises some new shape for a pipe or umbrella-handle,—as Dr. Traun recently devised a revolver-shaped pipe, which sold enormously. The law secures you against competition for three years, and that is all that is needed. Shapes change; they are a matter of fashion and temporary favor; after a few seasons a new thing is wanted. At the same time, it is true that the German hard-rubber manufacturers tried to organize a pool or trust, after the American fashion. But, not being as cunning and shrewd as American business-men, their scheme fell through.

"Immense quantities of African rubber are consumed in Germany. Some of the manufacturers have their own houses in Africa, and they buy direct of the native rubber-

gatherers, exchanging tobacco, ornamental things, etc., for the crude rubber. The Hamburg demand for crude rubber is rapidly increasing."

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DR. HEINRICH TRAUN became a member of the Harburg Rubber Comb Co. in 1863, and assumed a leading position in its management two years later. Subsequently his brothers, Otto and Max Traun, joined him and extended the business, dividing it into various branches. But in 1884, the business having decreased in consequence of the extraordinarily high prices of crude rubber, Otto and Max Traun left the firm, and Dr. Heinrich Traun became sole owner. Since that time the number of employes has doubled, the company now employing more than 900 workmen.

The great success of Dr. Traun is due to the fact that he very easily perceived that the condition of stability and growth was the zeal, goodwill, and ambition of the workmen. The work in hard-rubber factories is peculiar, and totally unlike most other industries. It is very difficult to get men who know the work. Men have to be trained for it, and, this training being prolonged and expensive, it is necessary to guard against the waste and loss involved in frequent changes in the force. Dr. Traun first of all fixed a higher rate of wages than the market demanded and thereby secured the best men. Besides this, he started philanthropic enterprises for the benefit of his employes. On joining the firm he founded an organized charity fund for the support of workmen in cases of sickness or accident. To that he added an old-age pension fund. A man who becomes disabled through old age, after a service of twenty-five years in the employ of the company, gets after retiring half of the amount of wages, annually, which he earned, on the average, during the last ten years of his service. The amount of the pension is gradually increased, so that a man who has worked fifty years for the company gets his regular annual wages after retirement.

There are other means of enlisting the loyalty of the workmen, less pretentious, but not less effectual. Thus every year the company provides a feast for its employes, at which medals are distributed. Men ending their tenth year at the time get a bronze medal, twenty-five-year men get a silver medal, and those winding up half a century's service get a gold medal worth \$100. It is remarkable that, though the latter have the option of getting a money equivalent of the medal, not one case has occurred in which a man has preferred the money. So far twenty-eight gold medals have been awarded, and some of the recipients are still at work. Medical advice, care, and attendance are provided free of charge to sick workmen. The company employs two or more trained nurses to do this duty whenever it is required. Widows of workmen are also allowed small pensions, which cease when they marry again, Strange to say, though German women are believed to be especially fond of family life, few of the firm's "widows" choose to contract a second marriage; they generally prefer to draw their pension regularly and live in single blessedness, much to the annoyance of the company. The number of such widows on the firm's hands is considerable, and the idea has been suggested that it might be a good in-

vestment for the firm to pay a premium to those workmen who should marry them.

The company supplies coal at wholesale prices to its employés. Coffee is provided free during working hours, and beer in the summer; but liquors are strictly prohibited. The workmen are allowed to take coffee home to their families. The working-day is 9½ hours, except Saturday, when work is suspended at noon. In the winter months work begins at 7 A. M. and in summer at 6.

Dr. Traun has also organized institutions for pleasure and recreation. Singing societies and an orchestra have been formed by members of the force, the firm paying for teachers, musical instruments, notes, and other incidental outlays out of a special "amusement fund." Every winter a great ball is given, at which the orchestra and singing societies are expected to show the results of their labors. Twice during the summer the orchestra and workmen are invited to a picnic in Dr. Traun's park, near Hamburg. The workmen bring their wives, sweethearts, children, and friends. The boys are provided with athletic instruction in the public gymnasium. This keeps them healthy and strong. Boys can enter the industrial schools of Hamburg free, the firm paying the tuition, but few avail themselves of this privilege, preferring to spend their time otherwise.

The desire of Dr. Traun to keep his workmen strong has

naturally suggested the idea of providing them with good clean, airy lodgings. To celebrate the twenty-fifth year of his business connection with the company, he built nine small houses surrounded by a garden and an acre of land, thus bringing up the number of such houses to twenty-nine, twenty having been built before. They are occupied by the foremen and workmen having large families, and the rent charged is merely nominal. Mrs. Traun looks after the families of the workmen. Her own children all being grown up, she devotes herself to the welfare of the families of the workmen, assisting her husband in the management of the charity fund, distributing Christmas gifts, and visiting the old and sick.

During the cholera epidemic of two years ago, Dr. Traun never left his factory for an hour, and succeeded in averting a panic among his men, though he paid for this with a slight attack of the disease. Dr. Traun is a strong, vigorous man, fifty six years of age, though still younger in spirit. In the summer he enjoys playing tennis with his children, while in winter he follows the example of Gladstone and chops trees with a large American hatchet.

Dr. Traun is a nephew of Mr. Carl Schurz, who is so well-known in America. Mr. Schurz's wife was a sister of Dr. Traun's mother.

## NO RESULTS FROM RUBBER-CULTURE UP TO DATE.

*By Herman Reimers.\**

I N requesting my views in relation to the practicability of planting India-rubber as a commercial undertaking, THE INDIA RUBBER WORLD is asking a question that is of great interest to me, and I want to take some pains to answer it. Suppose we examine the record of rubber-planting as chronicled in THE INDIA RUBBER WORLD, and let me see if I can recognize any of the owners' names given there as present shippers of rubber. For instance, you spoke first of the experiments at the Royal Botanical Gardens at Ceylon, Singapore, and Trinidad; as far as I know they have resulted in demonstrating that the rubber-tree can be grown artificially under favorable conditions, but they have proved nothing of value commercially. Then there were the plants sent from the Kew Gardens in London to the Gambia settlement, on the west coast of Africa. These produced thrifty trees and were the means of inducing some parties to invest a good deal of money in rubber-culture. We get rubber from that section but have not been able to find that any of it comes from plantations. We would trace it in this way: a bale of rubber from a plantation would be prepared differently from that which comes from the virgin forest. Now we do not get any Assam rubber that is a bit different in quality from what we have had right along; hence I believe that the plantations are not producing anything for us.

Further on, it was mentioned that General Feron of Honduras owned a plantation grown from cuttings brought

from Brazil. It is time we heard from that plantation if there is anything in it. The American Exporting and Trading Co. undertook the organization of companies for cultivating coffee, sugar, and rubber in Mexico, but so far we have not heard a word from them. In 1890 rubber-plantations in Chiapas, Mexico, were mentioned with the report that fine results were being obtained. I certainly have not heard of any rubber from there. Indeed, a friend of mine who is a banker at Zacatecas, Mexico, wrote me that as far as he knew there was nothing in any of the rubber-planting schemes there. This answer would also cover the report that a German syndicate had large lands in Guerro, Mexico. Then it was reported that somebody who had invested \$5000 in a rubber-plantation near Cordova, Mexico, drew out of it \$20,000 in one year. I would like to ask who he is, where he sends his rubber, and how it is labelled. In 1891 it was claimed that 1½ tons of cultivated rubber, from trees planted in Java ten years before, had been sold in Holland. This began to look like progress. We certainly ought by this time to get more Java rubber, and we should like it. Many of the rubber-manufacturers have wished to use it and, from time to time, have called for it. There are two or three tons of it occasionally sold in London, but that is about all it amounts to.

At one time it was chronicled that rubber-plants were sent from Pará to Libreville, in French Gaboon. The first importation was 15,000 young plants, and the next year they planned to send 200,000. No further information has come from this region, nor are we looking for any

\* Member of the firm of Reimers & Myer, India-rubber importers, New York and Boston.



rubber from that plantation. In 1873 it was reported that a plantation for Assam rubber had been started by the British government, and that in 1890 it covered 1106 acres. It is now twenty years since that plantation was started, and it certainly is time for results. Where are they?

Turning to the United States consular reports that were secured by your journal I have looked in vain for names that should give us some clue as to the possible shippers of cultivated rubber, and I find none. I have mentioned but a few of all the experiments that I have seen chronicled and it is my belief that, look as carefully as you will, you will not be able to discover that any successful rubber-planting has been done. From time to time we get samples of cultivated rubber, and then we hear nothing more from the senders. In one case, recently, a small lot of very fine rubber was sent from a plantation near Pará. It was so good that we immediately cabled for 26,000 pounds of it, but that is the last we have ever heard of it. I have never personally known of a shipment of 1000 pounds from any plantation, and if that amount had been shipped from any of them I believe that I should have known of it. Two years ago, in Europe, I met a German who had a place in Cordova, who told me he had 20,000 rubber-trees growing, and that I should have samples of rubber the next year. Hearing nothing from him, I looked up his New York connections. They smiled when I asked about the plantation, and intimated that it was sort of a fad of their client, and that they did not believe it to be a com-

mercial success. I knew a case very similar to this in Peru. A gentleman had planted the trees and would soon be ready to send samples, but they have never arrived.

I honestly cannot see any real sign of progress in rubber-cultivation. I do not say this to discourage those who are putting time and money into the schemes, but am looking at it simply from the standpoint of a possible investor. I think that it would be a more practical thing to so cultivate the natives that they will not destroy the trees; indeed, much progress has already been made in this line. But, as a matter of fact, let the natives work as hard as they will in South America, I do not believe that they can exhaust the rubber, even by cutting down the trees. In the abused districts the trees start up again and grow very rapidly, and there will be a new forest in a very few years without any care or cultivation. There is another point about this cultivation business that should be considered. Rubber-trees grow in swampy and malarial districts, where none but the native Indians live. Some years ago a wealthy rubber-manufacturer sent a hundred men to gather rubber for him, but not one came back,—all perished miserably in the swamps. This is the case no matter what class of men are sent; Poles, Norwegians, and Chinese all succumb to the terrible exposure that they are forced to undergo. This matter of rubber-cultivation, if practical, would be of the greatest interest to us, but I repeat that I do not believe that it is practical, or that the results will ever justify the outlay of time and money that is necessary to even make a beginning.

## THE NEW TARIFF AND THE MACKINTOSH TRADE.

*An Interview with a Manufacturer.*

**M**R. GEORGE F. HODGMAN, president of the Hodgman Rubber Co. (New York), was seen by a representative of THE INDIA RUBBER WORLD and asked to state his views briefly on the tariff discussion printed in the January issue, as well as on the situation created in the trade by the pending tariff bill.

"I do not know," said Mr. Hodgman, "that I have much to add to what was brought out in your full discussion of the matter last month. Of course some of the views expressed were extremely erroneous, to my mind, but it is hardly worth while to go over the ground again for the sake of correcting the misstatements. But it may be said with entire confidence that the trade at this time and the spring trade, while seriously affected, is not really affected by the possibility of a change in the duties. The spring trade will be over before the bill can pass Congress, or go into effect. What the trouble just now is, may be summed up in the word 'uncertainty.' It is the uncertainty that prevents manufacturers from making up a stock of goods. Materials for the fall trade are generally ordered in the spring, but nobody is now in a position to make large orders, and the mills are therefore idle. Before people order goods to be made, they have to be sure of a demand for them; now, a demand for mackintoshes cannot be created until the public have the money

to purchase them with,—that is, until business revives and people have employment and wages. This of course applies to other goods as well as to mackintoshes, but the mackintosh trade is likely to feel the depression more for the reason that the mackintosh is more of a luxury, generally speaking, than other classes of rubber goods. Rubber boots and shoes are a necessity; rubber clothing is also a necessity for certain classes of workmen; but the mackintosh is a necessity only to a comparatively small number of people. In hard times all things not strictly necessary are dispensed with.

"So much for the effect of the uncertainty. Now suppose the bill passes as it stands; what are its probable results? There is no doubt that low-priced mackintoshes (so-called), made entirely of cotton materials, need not fear the changes of the new tariff. Imported cotton materials under the new schedule will not be reduced materially, and the sharp competition of the domestic manufacturers will effectually prevent the importation of cheap goods. In cheap grades the home competition is very keen at all events, and the foreign manufacturer could in all probability undersell the home manufacturers. But the high-grade goods, made of wool entirely, will certainly feel the effect of the proposed changes. The duties in the new bill are inadequate and will not afford protection to

American manufacturers of high-cost genuine mackintoshes. The duties, in order to be protective, must be higher, though not as high as under the McKinley tariff. And here an important point is met, requiring emphasis. Over-protection is an evil. It is a mistake to imagine that we cannot have too much protection. The McKinley duties on mackintoshes, as well as in some other directions, were certainly too high and to some extent defeated the object they aimed at—protection. Over-protection has a tendency to stimulate competition and over-production. Too many enter into the same line of business, with the result that the market is glutted and prices unduly forced down. Wise protection is neither too high nor too low. A proper revision of the present tariff would not excite the opposition of intelligent and conservative business men, but the Wilson measure substitutes one evil for another.

"Another serious defect in the proposed bill is the *ad valorem* system. So far as mackintoshes are concerned, *ad valorem* duties prevent a fair and correct estimate of the real cost of the goods. For example, an invoice of twenty-five different styles of mackintoshes in one shipment would make it an exceedingly difficult matter to get at an approximate estimate of the cost of the several styles. The best appraiser would be liable to fall into a mistake of 15 or 20 per cent. Even an expert, an experienced manufacturer, could not distinguish the goods without great difficulty.

"Now to advert to one of the general arguments in favor of the proposed tariff. There is a good deal of talk about American competition in foreign markets, about our gaining supremacy in the markets of the world. Now, as a matter of fact, on no condition can we export mackintoshes to Europe, except, possibly, if our wages are made lower than they are over there. Our styles and finish are no doubt superior in many respects to the foreign goods, but it would not take them long to deprive us of any advantage in that respect by improving upon the quality of their goods in those respects. But the difference in cost of manufacture cannot be done away with. Our high

wages will prevent the introduction of our goods there. The foreigners will not pay more for American goods, even though they may be superior, than they pay for their own. They will not even pay as much. Other things equal, they prefer to buy goods of their own manufacture. It is only here that the demand for foreign goods simply because they are foreign is something of a fad. How can we compete with the European manufacturers in their own markets, when their cost of production is lower and their goods are very satisfactory on the whole? This talk about foreign markets for mackintoshes is fallacious."

"Now, suppose the Wilson bill passes, do you think the wages of our workmen will be lowered in order to meet the competition of the importers in our own market?" Mr. Hodgman was asked.

"That cannot be positively answered in advance. If the bill passes, some time will be needed for an adjustment to the new conditions. First of all it will be necessary to see what materials can be got for, and an attempt will be made to compete with the foreign goods without reductions in wages. If it shall be found that adjustment to the new conditions is possible without wage-reductions, of course no reductions will be made. It would be a great mistake to proceed at once to cut down wages before a practical study of the field. The actual conditions of the market should determine the question of wages. If there is no other way to make the manufacture and sale of goods profitable than by lowering wages, wages have to be lowered. If expenses can be curtailed in other ways, that will be done. But the first thing is to see what the materials cost under the new conditions.

"It naturally follows from all this that the passage of the Wilson bill cannot be followed by any great revival of confidence and business. People will have to do business on a small scale, cautiously, experimentally, for a while. But even a hand-to-mouth business is better than total uncertainty, such as we have had to labor under since the tariff agitation superseded the financial panic as a paralyzer of industry and destroyer of confidence."

## WINDOW DISPLAYS FOR RUBBER-STORES.

By Fred. H. Fuller.

ARE we up to date? The headline of this article doubtless has taken already a picture from memory's storehouse, and the mental photograph is before you of a particularly fine window display, whose artistic effects and attractiveness caused your eye to dance with pleasure and called forth words of admiration and favorable comments at the time from those who enjoyed it with you; a brilliant light, a bit of color, an original idea, a price; it may not have been any of these, but something caught your eye, attracted your attention, arrested your progress. Where was it?

We are "rubber-men," and there are few if any other lines of trade whose products are found in such a variety of stores and shops as are those which we sell and manufacture. Druggists handle our sundries; shoe-dealers our

rubbers; haberdashers, clothiers, hatters, and dry-goods people our mackintoshes; small-ware houses run our sheeting and specialties; crockery-houses and grocers in season dabble in jar-rings. Thus I might go on enumerating the different lines of business houses with which we all in a measure come into direct contact, and, in many cases, competition. In consequence we should be acquainted with and cognizant of the tactics employed by them in disposing of goods.

Note, in your going to lunch and to and from business, the bright attractiveness, the artistic elegance, of your neighbors' windows. Take a trip around town at your convenience and slyly peep at the display of other exclusive rubber-stores in your own city, then come back and examine your own. Cull from your well-balanced head-

piece the gorgeous sights that caused crowds to collect in front of certain shop-windows during the late holiday season. You doubtless recall how, with smothered ejaculations, you made up your mind that the street was good enough for you, as the impenetrable throng blockaded the sidewalk in front of some enterprising business house. Answer *now* the question: Are the retail rubber-stores abreast of the times?

Assuming that all are not, and being disposed to criticize, a glance at our exposed stock reveals an unbroken expanse of black and white, a dull-finished boot, a luster blanket, a length of hose, a roll of sheeting, a double coated coat;—all unattractive and somber in their customary repose. As we consider the matter with this lay before us a new admiration is born for the "fellow that fixes the windows" and we are surprised that he has been able to accomplish anything,—even ordinary results. Let's see; if you have any in stock, ten years' dust lies accumulated (unless you've brushed it off) on the gossamer circulars of "ye olden time" and the elegant single- and double-texture mackintoshes, silk- and plaid-lined, the finest productions of tailors' art, fill the shelves and racks; tissue-wrapped, patent-leather finished, and neatly-cartoned footwear of the latest style last and shape is now shown over our counters daily, while the clumsy "Pará galosh," in vogue when some of us were boys, adorns the museum shelf, the object of much curiosity, or is raked from the garret and trunk to be cut into "sling-shots" by the youngsters. In silk goods there are sponge-bags in the most fashionable patterns of "pongee," "india," and "surah"; air-pillows for traveling of light materials in pretty design; toilet-cases, neat and tasteful for the sponge, tooth- and hair brush, comb, etc.; eider-down covers with tassels and cord that make a common water-bag a thing of beauty; and then there are the toys, a display of which never fails to interest the little folk of the rising generation. We have here the material, an intersprinkling of which takes away the funereal aspect of the hues heretofore in mind. Why then this thushness?

In many cases the present condition of affairs is traceable to the fact that certain lines of our goods are prone to deterioration when continuously exposed to light and heat. The fallacy of this excuse is apparent, however, when we consider that windows should be dressed at least once in two weeks—oftener if possible—and that if exposure for this length of time renders articles unsaleable, they are certainly not desirable to keep in stock at all and would be practically useless to those who might buy them.

Again, other business houses do not confine themselves strictly to one exclusive display of their own goods; the yards of plush, silk, the crimped tissue draperies, etc., seen in the shoe, candy, jewelry, and other windows are foreign to the lines which they handle. Properly these are spoken of as fixtures, which brings me to politely call your attention to the well-nigh entire lack of fittings in our own windows. A frame should be in keeping with a picture, "connoisseurs" will tell you, yet many of the uninitiated have bought mere daubs because the attractive frames in which they were cased lent a fictitious value to the painting.

It is thus with window-fixtures. Ordinary display forms are repellant above the shoulders, yet with a wax-head how charming the effect. Common white and colored paper for window bottoms cheapen and spoil an otherwise good show. A dark pretty pattern in carpet or some kind of plain-colored cloth will give better results and in the end prove more economical. The brass rods for window sides I note in a few of the stores are neat and handy in showing sundries.

Right here permit me to speak of what I term "top and back" dressing, for want of a better name. Ordinarily bare window-frames are not attractive and smoke-begrimed or finger-marked walls are repulsive to those who note them. The former often stands out in bold relief when windows are cased in. A drapery of lace or chenille will neatly efface defects in the background and set off a display in good shape. Printed cartridge paper will give a finished appearance to the walls; a neatly-framed sign or advertisement will relieve the bareness, and a festoon of brightly-colored sundries hung on tape extended from the central light fixture to corners would give variation and enhance the attractiveness of other parts of the decoration.

I wish to call particular attention to these two items just mentioned, for it is well to bear in mind that the man on the other side of the street occasionally looks across, and people riding by in the cars and carriages do not catch minutely the intricacies of your work, but do size you up superficially by its appearance "from the road." True display might be characterized as "systematic carelessness," by which is meant the putting of an article in its proper place without calling attention of the looker-on to the fact that you have done so,—the avoidance of set mathematical precision in promoting designs. Individuality and originality are to be encouraged and will bring good returns whenever exercised.

Did it ever occur to you—you who, when "window-day" makes its appearance, look upon it solely as a time for dusting the display, brightening the panes and putting back the goods—that in those old cases in the basement lay the power, with proper arrangement and skillful utilization, of changing the sameness in the appearance of your decoration? To-day you could have a terrace, next time a pyramid, and so on throughout the year. After that come the variations, dressing from front to back, then from corner to corner. Why there are as many different designs as can be shown in a kaleidoscope.

Ours is in some localities a business of seasons. In my latitude spring awakens from its six months' lethargy the hose trade; summer brings an influx of traveling people on the lookout for souvenirs of the places they visit; the equinoctial storms of autumn convince the "back numbers" of the uselessness of an umbrella, and the mackintosh season is on with a rush; the first snow-storm of winter crowds the store with a poorly-shod populace impatient to get inside of a pair of arctic or rubber boots. Here, then, is the opportunity for *special* windows as occasion demands.

At other times, when all lines move, what shall be the magnets?



It is universally admitted that tastes differ, and it is wisely ordered that they should; in colors, one prefers red, another blue, and so on; a pattern that would delight me offends you; the same price might attract a bargain-hunter and drive away others (of the latter I will speak later on). One "bump," however, I am prone to believe, is abnormally developed on almost every cranium;—I refer to curiosity. You to whom it is so familiar would be surprised to learn how few have ever seen a "ham of virgin Pará"; yet I venture to say that such an article placed conspicuously in your window, neatly placarded, would cause comment and attract attention; a rubber-plant or two at "Easter" would be an addition to the customary display; those "gum galoshes" heretofore spoken of, which we young men have heard so much about, but never seen, would also without doubt arrest the attention of many a passer-by. Thus you see at our fingers' end lies the material for catering to the many; all are simple, inexpensive, and pertinent to the line we handle.

Many neat and pretty advertising signs and pictures are now issued by firms in the trade and often add rather than detract from the appearance of a window show, at the same time calling special attention to some article on sale. Lettered pasteboard announcements are also at many times desirable, and I believe are rendered doubly effective and durable by being placed under glass.

The question of price display I have heard debated *pro* and *con*, and I side with the "cons" except in special cases, as when convenience demands that goods be ticketed, and when a rare bargain is being offered. Commonly, though, I incline to the belief that a show of prices is inexpedient on account of the fact that cheap imitations of fabric and goods appear to outsiders at first glance "as good as" first quality, particularly when the same are shown in a window and not, therefore, subjected to competent and close examination.

"Advertising pays"; wherever we go we have that whispered in our ears or thrown in our face. The newspaper solicitor and the directory man shout it in your office; it is pasted on the walls of your city, and it is a generally conceded fact. We lay our offering on the altar of this seemingly insatiable god, with the hope that in return he will send us business. But it is impossible, except in isolated cases, to say which investment brings in the best returns.

At our very door, however, lies one of the best of advertising mediums, and it serves a two-fold purpose, for it lets in light and gives us a chance for display of our stock in trade. Under your own supervision, then, and at the expense of a few dollars, is an opportunity of estimating your ability as an attractor of attention and of keeping your store in the public eye. Yes, windows are a necessary adjunct of ordinary advertising, and as an independent means of reaching people are invaluable and will return four-fold the amount expended on or in them in time, patience, taste, and money.

By many of the large retail stores in these last few years "professional decorators" have been employed who spend their entire time at high salaries in originating and elaborating designs for display. Such exclusive men our business does not demand, for there is taste and ability enough already in our stores impatiently awaiting development.

In covering the ground in this article we see old man Hustle going by on the road to success; there he sits on his cart of progress driving the prize pair, Effort and Enterprize. Are you going to ride, or do you prefer to walk?

But enough of this; if I have succeeded in starting on its journey a train of thought I leave the same to your skillful guidance, with the hope that it will not be "side-tracked" here.

## THE LATE CYCLE EXHIBITION IN NEW YORK.

THERE was time, in printing the last number of THE INDIA RUBBER WORLD, to secure only a brief report of the bicycle-show at Madison Square Garden, for which reason a few additional notes may be presented herewith in relation to some of the individual exhibits. No small interest was manifested at the exhibition with regard to the drift of improvements, not only of the wheels, but also of the parts more directly related to the rubber trade, namely, the tires. From a business point of view the exhibition was highly successful; dealers, agents, and individual buyers were present in large numbers, and a great volume of business was transacted.

Briefly summing up the technical results of the year's progress, it may be said that the "safety" has almost entirely displaced the ordinary. With the exception of the novel geared ordinary shown by the McIntosh-Huntington Co. (Cleveland) all the machines were of the diamond-frame pattern. Among the improved safeties, the Triangle, of the Peerless Manufacturing Co. (Cleveland), attracted much at-

tention. All high-grade bicycles seem to tend toward a single standard, and the resemblances are more numerous and important than the differences. As to tire features, it is evident that the pneumatic has come to be regarded as an essential attribute to a high-grade wheel, and the tendency is toward its use in medium grades as well. Cushion and solid tires were to be found only on juvenile wheels. The improvement in tires since the last exhibition seems to have been confined to fabric and valve. Sea Island cotton is most generally preferred. Many spectators, even the lay ones, have been struck with the extraordinary softness of the tires. Whether or not the desire to make the yielding property of the tire as pronounced as possible has carried manufacturers to an impracticable extreme, time and experience alone can demonstrate. It is feared that some of the tires will have to be kept pumped hard at all times. Most of the tires shown were of the inner-tube type, and much attention has been devoted to perfecting devices for attaching to the rim the cover of the inner tube.

The American Dunlop Tire Co. put particular stress on their Dunlop detachable tire, the essential parts of which are, the rim of the wheel on which it is applied, (made either of steel or wood) the outer or protective cover, and the inner tube, including the valve. The outer cover has in each edge an endless wire hoop, which is enclosed in a lining of Sea Island cotton woven so as to conform to the shape of the tire without stretching it. This is a new feature of the tire, controlled by a patent, and it is intended as a means of doing away with fraying and bursting of the protective cover. The inner tube is made of Pará rubber, the ends are carefully joined, and the valve is inserted in a "mushroom" stem. In detaching and replacing the tire no instruments are used. The tires have to be kept inflated hard, and never ridden deflated.

The Dunlop company make a specialty of building tires for vehicles of all descriptions, and the rougher and stonier the road, the more valuable the pneumatic tire. They claim that the successful adaptation of the pneumatic tire to carriages, ambulances, and other vehicles, light or heavy, is a matter of correct proportioning simply. A carriage with a heavy load naturally requires to be shod with heavy tires. The Irish jaunting-car which they exhibited afforded a striking example of the higher development of the pneumatic tire. The tires are made substantially on the bicycle plan, with the inner air-tube, removable envelope, and wire-band for fastening.

The Columbia Rubber Works Co. (New York) exhibited the Palmer tire, the Akron tire, and the G. & J. tires of the clincher type. The Palmers are single tube tires, and the secret of their speed and resiliency is in the manner of construction. Upon a gun-tube are wound spirally two layers of thread, each thread being embedded in rubber and out of contact with its neighbors, and the layers separated by a wall of rubber. The threads are free to move over each other without friction to the limits of the elasticity of the rubber. For puncture-closing elasticity is relied on. By the molding of the thread of the tire on one curve and on inflation reversing the same a compression is obtained, by reason of which any ordinary hole in the tread is closed. The Akron is an inner-tube tire. The outer cover is laced all the way around. The company also showed handles of hard and soft rubber, and pedal rubbers.

The New York Belting and Packing Co., Limited, showed the French-Michelin, the Whippet Improved, and cushion tires. They have an improved valve, which pumps easily. The check is absolute. The fabric is not put in the valve-stem itself, but is placed on the outside, the threads being separated and spread on the flange of the stem, thus reducing liability to pull, cut, or break off. Another weak point in tires has been remedied by vulcanizing the metal shank of the valve into the stem, thus making an absolutely-tight joint. The company showed handles combining the strength and durability of rubber with the feel and appearance of cork; also molded pedal rubbers.

Hulbert Brothers & Co. exhibited their Majestic wheels, sundries, and the standard tire—the Majestic model clincher. The outside shoe has two thicknesses of linen fabric on

the inside, with the rubber vulcanized into the fabric. On each edge of the shoe there is a continuous spiral system of metal loops into which the fabric is woven. The portion resting upon the rim is corrugated in alternate sections. Around the rim is cemented a strip of rubber, corrugated to correspond with the corrugations on the bottom of the shoe. Thus the tire cannot slip. The inner tube is vulcanized at one point only, to render it endless. The attachment is mechanical. It is a cement and clincher tire, combining the qualities of each.

The Providence Tire Co.'s "Providence double-tube tire" provides for the use of two inner tubes, one drawn through the other. Each tube has an independent valve. The outer one is first inflated, forming an ordinary inner-tube tire. If this becomes punctured, or the valve gets out of order, the reserve inner tube is inflated. Should this tube become damaged it can be inflated again by displacing it so that the puncture in the two tubes will not fall opposite, one forming a patch for the puncture of the other. The weight is not greater than the average single tubes, and they are as easily detached.

The Manhattan Rubber Manufacturing Co. (New York) showed the new detachable pneumatic tire, Simplicity No. 47. There is no mechanical fastening, no cement, no lacing. The principle of this tire is based upon increasing the diameter in the gutters of the rim after the cover is put on, by partially filling the gutters with a rubber cord encircling the rim at the bottom of the gutters, which forms a cushion-bearing for the edges of the cover and supports it in an immovable position. The rim is constructed of two parts. The inner section forms a gutter or groove on each side of the rim for securing the cover to the rim. The edges of the cover are made of a circumference greater than that of the bottom of the gutters, but less than that of the outside edges of the rim, and sufficiently greater than the circumference midway between the bottom of the gutters and the outside edges of the rim to admit the edges of the cover entirely within the gutters of the rim. The cover cannot escape from the rim, no matter what the pressure is.

The Hermes Tire Co. (Boston) showed the Hermes tire, which is a double-tube tire so constructed that the inside tube is above the rim. The fastening is mechanical. The valve is claimed to be air-tight.

H. A. Lozier & Co. (Cleveland) showed the Clincher steel-rim and thread pneumatic tire. The longitudinal threads are omitted from the tread. The transverse threads support the tire perfectly, and at the same time do not detract from the resiliency and elasticity of the rubber and the confined air. The object is to allow small obstructions to be absorbed, when the internal pressure of the air will instantly expel them. Large obstructions do not produce any prolonged depression, owing to the absence of longitudinal threads. The rim is of wood with an iron face.

The Elastic Tip Co. (Boston) showed cushion tires, the Boston pneumatic tire, the Boston pneumatic racing tire, and solid tires, besides rubber and bicycle sundries. For the racing tire the claim is made that in case of puncture

the rider can finish the race without danger of being thrown from the wheel.

The Boston Woven Hose and Rubber Co. showed the "N. G. L." tire, which consists of a cover, an endless air-tube, and a clamping band which secures the cover to the rim. The band is made with folded and turned edges, which engage hook-shaped beads on the cover; it underlies the inner tube. The use of the band has a number of advantages.

The Newton Rubber Works (Boston) exhibited molded rubber goods relating to tire and bicycle work, and the Huestis pneumatic tire, which is of the clincher type, depending for its hold upon the inflation of the inner tube. The point that attracted most attention about it was the simple, yet effective, device for preventing creeping.

The Wilson-Myers Co. (New York) showed the Liberty bicycles and the Liberty detachable pneumatic tire, for which the following advantages are claimed: mechanical attachment by means of swaged steel wires; absolute control of wire diameters; prevention of contact with moisture by coating with rubber the pocket through which the wires run; absence of cement or lacing; independence of the tire of air pressure or any fixture to the rim.

The Eastern Rubber Manufacturing Co. (Trenton) showed a line of tires covering a wide range. There were single-tube tires and inner tube tires. Among the latter the most prominent is the Cyclone, a mechanically-fastened clincher tire. As far as the air-tubes are concerned three styles were shown: the Climax, with ends vulcanized together, air valve near one end; the Gem, with valve in the center, and ends closed; and the Cyclone, with telescope ends. Pedal rubbers, handles, and their Samson rubber cement were also shown.

The Overman Wheel Co. (Chicopee Falls, Mass.) showed their different wheels and their tire, which was substantially last year's, but which has been improved in the valve construction. It has been reduced in weight, and the whole mechanism is enclosed within the rim.

The New York Tire Co. showed three styles of inner-tube tires. They are of the variety which is secured to the rim by cement. One of their features is a constrictive fiber. A puncture produces no effect. A wheel was shown whose tires had more than one hundred punctures, and they were ridden over 3000 miles without deflation.

The Erie Rubber Co. showed a tire which has a simple and cheap fastening device. In place of the band, there is a cord, which is held in place by the expansion of the inner tube when inflated. Another novel feature is that the inner tube expands only widthwise.

One left the exhibition with the impression that the last word has by no means yet been said on the subject of tires. There seems no end to improvements or to application of the tire in different fields. There is ample reason for saying that the next exhibition will show interesting results in the application of the tire to vehicles of all kinds.

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#### VIEWS OF THE MANUFACTURERS.

MR. RANDOLPH, of the Commonwealth Rubber Co. (New York), said: "The exhibition was a great success from start

to finish. No doubt hereafter the key-note to the year's business in bicycles and articles pertaining to cycling will be given by the exhibition, which will be a permanent institution in New York. As a result of the exhibition we have had many large orders placed with us. From the technical point of view it cannot be said that many new ideas were suggested by the exhibition. Both the bicycle and the tire have reached a standard type, and for a long time to come no important change can be looked for. There will of course be many slight modifications and little improvements, but they will be determined by taste rather than need."

S. Y. l'Hommedieu, treasurer of the Columbia Rubber Works Co., expressed great satisfaction with the results of the exhibition. "Every exhibition brings business," he said, "but this last has been the most successful. We took a number of large orders on the spot, and have received orders from manufacturers since the close of the show. The dealers we met there could not have been reached by a year's travel. The Palmer tire attracted favorable attention, and we believe it is going to monopolize the market. Twenty-four out of our twenty-eight agents want to handle the Palmer tire. The people like it. It has won a large number of races and has proved in every way satisfactory."

A representative of the American Dunlop Tire Co. said: "We are well pleased with the results of the exhibition. Not only are the immediate financial returns in the way of orders good, but in many other ways will the exhibition prove of great benefit to us. We showed that the application of the pneumatic tire to vehicles is practicable and desirable. Our rubber-tired Irish jaunting-car was greatly admired. As a result of that novel exhibit, we now have an order from the New York Hospital to fit up an ambulance with pneumatic tires. Now, if that is a success, we expect hundreds of similar orders, for you can readily see what an immense advantage it is to have rubber-tired ambulances—how much pain and suffering it will save. We have also an order to fit up an omnibus with pneumatic tires. The weight on each wheel will be about a ton, but we are confident of success even in this extreme case. One order of this kind leads to many; so, you see, we have reason to feel fully rewarded."

A representative of Hulbert Brothers & Co. said: "So far as we are concerned the exhibition has been a success. It has brought us a good many orders. We are in favor of making New York the regular place for annual cycle exhibitions. Just now there is another cycle exhibition in Philadelphia, but the trade does not really need it, and will not reap much benefit from it. One exhibition a year is sufficient. As for technical aspects, nothing striking has been developed. The tending toward mechanical fastening of tires has been made more manifest, and the success of the pneumatic has been confirmed. It is too early to predict the line of improvements for the next year, but the probability is that they will be slight. The application of the pneumatic tire to carriages and other vehicles is doubtless a good idea, but we are not paying any attention to that branch."

A representative of the Wilson-Myers Co. said: "The



exhibition brought us thousands of dollars in business. There were more dealers in attendance—and dealers, too, capable of paying bills—than at any previous exhibition. As for the technical aspect very little can be said. We do not yet know what the tire of 1894 will be. Of the many competing for supremacy, some will be vindicated by their merits while the rest will fail. Manufacturers have to supply the agents with the tires they find to be popular, not with those the manufacturers like to sell. As for the tires of 1895 prediction would be hazardous indeed. There is no limit to inventive genius. Things may take an utterly unexpected turn and surprise us all."

Mr. L. K. McClymonds, general-manager of the Mechanical Rubber Co., said: "This was our first appearance at a cycle-show, and we went to some trouble and expense to make our exhibit satisfactory to ourselves and interesting to the cycle fraternity at large. We were much gratified with the approval shown our efforts. Our three new tires—the 'Cleveland' loop, 'Yankee' band wedge, and 'Chicago'—proved a strong trio. The exhibits of crude rubber in various forms were unique, calling forth comments from all visitors at our booth. Yes, it is 'three

ringers' and no mistake, and you can tell the cyclist that we are confident we can throw one every time. If he is within hailing distance let him look out, or we'll be over his head."

A representative of the New York Belting and Packing Co., Limited, said: "We were very much pleased with the results of our exhibit at the cycle-show. The large number of visitors and the interest they showed in everything novel that we had to offer was proof enough to us of the value of cycle-shows in general and the wisdom of the Association in selecting New York for a show this year in particular. Our efforts to make our exhibit an attractive one were evidently appreciated. The 'Whippet Improved' and 'Gee Whiz' tires have gained a reputation with the trade, which was well borne out by the large numbers of new faces seen around our stand during the week. As for our brand-new tire—the 'New York Key tire'—it was voted the most sensational development in the tire line. It took like hot cakes, and it will keep us busy to fill orders already booked. We are firm believers in cycle-shows in general, and hope that the interest in them will increase from year to year."

## EXPERT TESTIMONY IN THE ACID PATENT SUIT.

*Continued from the last "India Rubber World."\**

JOHN MURPHY, superintendent of the Gutta Percha and Rubber Manufacturing Co. (New York), testified that he had been in the rubber business since 1847. He bought a lot of unvulcanized scrap from the National India Rubber Co. in 1875, for the Gutta Percha company. This consisted of clothing, scrap, belting, etc. It was boiled in sulphuric acid and water, the fiber eliminated, and the rubber used in the manufacture of goods by his company. He read from the factory books dates of purchases of sulphuric acid from S. Jenney & Sons, there being sixteen entries between July 14, 1877, and February 15, 1879. He marked on a plan of the Gutta Percha and Rubber Manufacturing Co.'s Brooklyn factory the place of the chemical rubber-reclaiming plant, and presented a receipt from J. Brickett, dated August 16, 1877, for lining a tank with lead. He described the tank as being 8' 10" in length, 3' 10" in width, and 2' deep, fitted with a perforated lead pipe for conducting steam through the acid and water, which pipe was connected with the boilers. He testified that water was not introduced through that pipe as it was run into the tank through rubber hose. The lead pipe was located in the bottom of the tank and the pressure from the boilers was about 80 pounds. In describing the process he stated that the tank was filled with water to a depth of about 8 inches when one carboy of acid was added. It was allowed to cool some little time and about 500 pounds of scrap were then put in. In this state it was allowed to remain over one night and soak, and in the morning steam was turned on and the boiling continued all day. The mass of scrap in the tank had boards put on it

which were pressed down by weights to make the fluid go through more readily. When the boiling was completed the scraps were taken to a washer, thoroughly washed, and the gum was sheeted and hung in a drying-room for days or weeks before use. He testified that the fiber rotted by the process was entirely removed by the washing. For heavy duck scrap he used a larger proportion of acid than he did for light fabrics, and had tried all strengths of acid from 2½ per cent. to pure commercial. His experimenting began in 1864, and ended in 1878, and one result was that he learned that as more acid was used, less time was required to destroy the fiber. The tank before spoken of he stopped using in 1879, but fitted it up again in 1881, as during that interval the company had waited for their own scraps to accumulate. He testified that in 1884 he fitted up another tank for which he showed receipted bills, etc. This one he arranged to be used without steam, having beneath it a place where a wood fire could be kindled for the purpose of heating it. This was not a success, however, as the rubber scrap adhering to the bottom of the tank kept the liquid from cooling the lead with which it was lined, and the lead lining melted. He therefore gave up the wood fire and substituted steam-pipes. His idea in making this experiment was to prevent condensation and save the acid. In 1885 he fitted up a third tank, which was 10' by 4' by 4'. It was made of plank, lined with lead, and heated by means of steam-pipes. He made a point of the fact that the washer used for cleansing the gum, which was like that used in the washing of crude rubber, was finally destroyed by the action of the acid and that as a rule the rolls lasted only about a year. For this reason he introduced a paper engine for cleansing the scrap from

\* In THE INDIA RUBBER WORLD of October 15, 1893, will be found the particulars of the points at issue in this suit.—THE EDITOR.

acid, and afterwards a conical wood roller revolving in a circular vat. He testified that sulphuric acid was used for no other purpose in the factory than for eliminating the fiber from rubber scrap, at the same time showing specimens of gum recovered by this process.

During the cross-examination Mr. Murphy gave the names of numbers of men who had worked for him and who were familiar with the plant and the process. He also testified that in 1863 William Judson offered him what was known as the Hayward process, and that there was fitted up a small plant in New Brunswick, N. J., where much scrap was recovered, most of it going into blankets for the government. A point brought out in the re-direct examination was that when old shoes were low the blowing or mechanical process was cheapest to use, and when high the acid process was cheapest.

AMADEE SPADONE, president of the Gutta Percha and Rubber Manufacturing Co., stated that he had occupied that position for twenty years. He testified regarding the scrap purchased from the National India Rubber Co. Speaking of the Hayward process, he stated that he had been shown the rubber recovered by this process in the summer of 1877 or 1878, and said that sulphuric acid and water had been used in the recovery. He had specimens absolutely free from fiber, perfectly black, with no white specks. He described the lead-lined tank, its location, etc.

MATTHEW HAWES, treasurer of the Gutta Percha and Rubber Manufacturing Co., testified that he had receipts as far back as 1879, and, referring to Superintendent Murphy's testimony, quoted entries of purchases of sulphuric acid from S. Jenney & Sons, in 1879.

ROBERT O. HELM, of New Brunswick, N. J., testified that he had worked for the Gutta Percha and Rubber Manufacturing Co. from 1874 to 1890, as assistant superintendent. He testified that about 20,000 pounds of scrap were purchased from the National India Rubber Co. and treated with sulphuric acid and water in 1875. His description of the plant for recovering was similar to that given in Mr. Murphy's testimony. He testified that in 1863, while in the rubber business in New Brunswick, N. J., the acid process was used for recovering blanket scrap,—that is, the scrap was boiled in acid and water and the acid washed out, and it was used afterwards for making blankets for the government.

EDWARD CAREY was employed by the Gutta Percha and Rubber Manufacturing Co. from 1877 to 1880. He testified as to the shipment of scrap from the National India Rubber Co., and described the tank and the process used. His business was to test the product and see if the fiber had been rotted. He also described a former process for treating old shoes, which consisted of cutting off the uppers and putting them in hot water, and afterwards tearing the linings so that the rubber might be rewashed.

TERRENCE J. MORRIS, bookkeeper and clerk at the Gutta Percha and Rubber Manufacturing Co.'s factory, testified that he had worked there seventeen and one-half years and certified that the entries referred to by Mr. Murphy in his testimony were in keeping with the factory books. He

went through the long list of entries one at a time and testified that the acid purchased was used only to recover rubber scrap. He was later recalled in behalf of the defense and testified to receiving acid from S. Jenney & Sons and Martin Kalbfleisch's Sons. He also testified as to the dates when the men mentioned by Superintendent Murphy were employed in the factory.

JOHN M. LEONARD worked for the Gutta Percha and Rubber Manufacturing Co. from 1877 to 1882. He testified as to the rubber scrap, the tanks, their location, etc. He had helped to fill the tank with acid and water and with scrap. He testified also as to the boiling, handling and washing of the scrap.

JOHN BRUEN worked for the Gutta Percha Manufacturing Co. from 1877 to 1887 and testified as to the lead-lined tank which he had helped fill with water, acid, and scrap, and described the washing of the gum after its treatment.

JAMES MORRISON, who worked for the Gutta Percha and Rubber Manufacturing Co. the first nine years of the time that the Brooklyn factory was running, testified as to the rubber scrap there and described the acid process.

JULIUS SCHRODELSEKER, who had worked for the Gutta Percha and Rubber Manufacturing Co. for sixteen years past as a mixer, remembered the acid process and gave testimony as to the location of the tank, the destruction of the fiber by the process, etc.

FERDINAND FUNK was bookkeeper for S. Jenney & Sons, Brooklyn, from 1877 to 1879, and testified that the Gutta Percha and Rubber Manufacturing Co. bought naphtha from his firm, who also occasionally sold sulphuric acid, of which the former concern used large quantities for the refining of their oils.

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#### THE CHEMICAL RUBBER CO. IN THE COURT OF APPEALS.

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IT is reported that the Chemical Rubber Co. have petitioned for leave to submit a brief in a patent case that is about to be argued before the United States Circuit Court of Appeals, regarding the influence that the termination of foreign patents should have upon American patents. The reason for their interest is that the term for which the English patent of the Chemical Rubber Co. was granted will expire in November, 1895. There are two conditions under which foreign patents may affect American patents. Where the foreign patent was issued before the American application it has already been decided that the American terminates at the expiration of the term of the foreign. Where the American patent was issued first the foreign of course does not in any way affect it. A third condition is where the foreign patent is issued between the application and the issue of the American patent. This case is now coming up for decision and, as already stated, the Chemical Rubber Co. are so much interested in it that they wish to present a brief, as there is a possibility that the decision may establish a ruling unfavorable to them.

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AN English formula for a rubber substitute is 10 parts of paraffin, 1 part bitumen, 2 parts India-rubber, and this in spite of the fact that rubber manufacturers the world over are afraid of paraffin.

## BRIEF ABSTRACTS OF RECENT RUBBER-PATENTS.

**A**MONG recent patents issued by the United States Patent Office, embodying applications of India-rubber or Gutta-percha to a greater or less extent, have been the following. It is not practicable here to do more than to note the use of rubber in each case, with sufficient detail to enable those who are interested to decide whether or not to look into any particular patent more fully:

## TIRES.

No. 510,783.—Vehicle-Wheel. Peter Gendron, Toledo, Ohio, assignor to the Gendron Iron Wheel Co., same place.

In a wheel-tire the combination with a yielding tire, of a band on which the tire rests and an interspersed series of pointed projections struck up from the band, between the edges thereof.

No. 511,307.—Pneumatic Tire. Edward J. Miles, Newton, Iowa.

An improved pneumatic tire comprising the following elements in combination: a suitable rim approximately concavo-convex in transverse section, a metal band passed around the rim, a link pivotally attached to the periphery of the rim and also pivotally attached to one end of the band, a screw-threaded rod pivotally attached to the remaining end of the metal band extending through an opening in the rim and a set screw to engage the screw-threaded portion of the rod and provide means whereby the metal band may be tightened in the rim, and a suitable tire adapted to have its edges inserted between the metal band and rim.

No. 511,394.—Bicycle-Wheel. Joseph L. Yost, Toledo, Ohio, assignor to the Yost Manufacturing Co., same place.

A rim formed with a nipple recess and having its edges returned to form spring arms, and the tire covering having its edges turned within the seats formed by the return of the rim edges, and embracing the inner and outer surfaces of the extreme edge thereof, in combination with the inner inflatable tube.

No. 511,585.—Bicycle-Wheel. Frank Douglass, Chicago, Ill.

The combination of an inner tube, an outer tube, a locking strip,—one of the latter being provided with a longitudinal lug and the other with a longitudinal groove in which the lug is received and also with a longitudinal lug on the side next to the wheel-rim, and a wheel-rim provided with a longitudinal channel in which the last-mentioned lug is received.

No. 511,608.—Pneumatic Tire. James Iddon, Leyland, England.

The combination of a wheel-rim having an undercut channel or groove, an air-tube, and an outer cover for the air-tube, the cover having upturned lips adapted to engage in the channel or groove, and each formed partly of hard rubber and partly of soft rubber in the direction of its length.

No. 511,733.—Elastic Tire for Vehicle-Wheels. G. Hancock, Providence, R. I.

The combination, with an elastic inner rubber tube and an outer rubber covering, of an intervening filling of cork and a textile envelope.

No. 511,771.—Pneumatic Tire. Edward M. Graham, Chicago, Ill.

The combination of a tire-sheath having a divided base, a wheel-rim having marginal portions with which the base portions of the sheath engage so as to hold the sheath upon the rim and a flexible key-strip for removable confinement between the divisions of the base portion of the sheath so as to maintain such divisions in engagement with the marginal portions of the wheel-rim, the latter being suitably open to provide passage way for the removal and introduction of the flexible key-strip.

No. 511,827.—Bicycle-Tire. Fredrick Wiechard, Cassel, Germany.

A wheel-tire comprising an outer covering, a series of interior cylindrical packing pieces having hemispherically-recessed ends, and balls fitting within the recessed ends of adjacent packing pieces.

No. 511,850.—Rubber Tire. Woodburn Langmuir, Toronto, Canada.

A rubber tire having a concave or space made in its base, which base is placed between flanges formed one on each side of a metal band secured to a felly, in combination with a metal rod or other means for the purpose of compressing the rubber tire and forcing its edges against the band and its flanges in such a manner that, while rigidly holding the rubber tire in position, will leave a concave or space below the tire.

No. 511,899.—Pneumatic Tire for Bicycles. Albert J. Burns, Fairport, N. Y.

A flexible tube having a series of overlapping plates on its medial line and other series of plates arranged in paralleled rows on either side of said medial row.

No. 512,491.—Pneumatic Tire. Daniel H. Smith, Holyoke, Mass.

A shoe for pneumatic tire having a flexible and beaded edge thereof constituted by a spiral spring, the convolutions of which are flattened or collapsed.

No. 512,594.—Pneumatic Tire. Charles K. Welch, Coventry, England, assignor to the Pneumatic Tyre and Booth's Cycle Agency, Limited, Dublin, Ireland.

The combination, with a wheel-rim or felly, of a jacket of textile fabric, an inflatable air-tube inclosed within the jacket, and three inextensible cores for securing the jacket and air-tube to the rim, one of the cores being secured in each edge of the jacket and the third of the cores being placed loosely inside the jacket and not attached thereto.

No. 512,727.—Pneumatic Tire. Otto Linder, Brussels, Belgium.

The combination, with a divided cover for pneumatic tires having beads or enlargements on its edges, of metallic cases or shields adapted to fit over and inclose the beads or enlargements on the edges of the cover so as to render them unstretchable or inelastic.

## MECHANICAL GOODS.

No. 510,498.—Lawn-Sprinkler. Charles Anderson, Detroit, Mich.

In a lawn-sprinkler, the casing communicating with the water-supply and constructed with outlet orifices, the diaphragm located within the casing and dividing the interior of the casing into communicating chambers, and the valve to control the communications.

No. 511,729.—Spraying-Nozzle. William L. Deming, Salem, Ohio.

In a spraying-nozzle, the combination with a main compression chamber having a side inlet or supply channel, and reciprocating rotatable piston located in the chamber having a spiral outlet in its periphery.

No. 511,732.—Hose-Band Pliers. Charles F. Halstead, La Crosse, Wis.

In a pair of hose-pliers, the combination with a lever provided on one face with a dove-tail recess of a second lever having a dove-tail lug engaging the recess.

No. 512,252.—Hose-Mender. Eleazer Kempshall, Brooklyn, N. Y., assignor to Edwin M. Millard, same place.

A hose-mending device, consisting of a hollow cylindrical shank partially threaded on the outside to prevent the hose from being pulled off the shank, and having connected to the shank, by means of projections, the arms which are supplied on the inner side with the longitudinal beads for the purpose of preventing the hose from being unscrewed when the arms are pounded down.



## BOOTS AND SHOES.

No. 510,504.—Pneumatic Shoe-Sole. Albert W. Foster, Cape May, N. J.

A shoe comprising the upper and the rubber sole united thereto, the sole extending back to form a heel and consisting of the upper thin web, the lower thickened tread-portion having the intermediate arch or instep, the surrounding intermediate connecting wall between the web and tread, the sole being formed in one piece, and the inflating valve located in the arch of the thickened tread.

No. 511,166.—Overshoe. Willis L. Sedgwick, and Harry M. Erwin, Sioux City, Iowa.

An overshoe for skaters' use having openings at its sides and heel portions, to permit the skate-clamps to contract directly with the shoe, and having the wearing portion of the sole and of the heel cut away to permit the sole and the heel to contract directly with the skate.

## DRUGGISTS' SUNDRIES.

No. 511,790.—Fountain Syringe. Hiram B. Nickerson, West Stoughton, assignor of two-thirds to William H. Milliken and Edwin Trowbridge, Franklin, Mass.

A fountain syringe, consisting of a closed bag of flexible material, provided with a screw-threaded nozzle; a screw-threaded cap adapted to close the nozzle, and provided with a water eduction pipe, and an air- and water- induction pipe; a rubber tube adapted to be connected with the eduction pipe and provided with a nozzle; a rubber tube adapted to be connected with said induction pipe, and provided with a collapsible bulb having valves, whereby a pressure of air is maintained within the bag, or the supply of water is kept up.

No. 512,706.—Stopper for Bottles, Jars, etc. P. H. Holmes, Gardiner, Me.

The herein-described process of making a stopper of fiber, consisting in treating the fiber pulp with steam, pressing the pulp in the form of a stopper, dressing or finishing the stopper, dipping it in a solution of paraffin wax and Gutta-percha, and finally baking the stopper under pressure.

## SADDLERY GOODS.

No. 510,890.—Bridle-Bit. Edwin R. Cahoon, Newark, N. J.

A bridle-bit consisting, essentially, of a flexible metal core, a layer or coating of soft rubber joined to the core, a layer of fabric having a coarse mesh applied upon the rubber layer, and an outer layer of soft rubber applied upon the fabric and entirely surrounding the sides and the ends of the core, the whole being pressed and vulcanized in such manner that the rubber layers are joined to each other through the meshes of the fabric and a homogeneous mass formed.

## NOTIONS.

No. 512,113.—Dress-Stay. Julius Janowitz, New York city.

A twin-wire stay covered with vulcanized rubber having a channeled filling of the same between the wires, firmly uniting their inner edges.

## MISCELLANEOUS.

No. 510,402.—Rubber-Tread Horseshoe. Myron L. Chamberlain, Boston, Mass.

A compound horseshoe consisting of a metal portion provided with a copperized surface, and a wearing portion composed of India-rubber or its compounds attached to the metal portion by a union of the rubber and the copperized surface.

No. 511,472.—Tubular Structure Filled with Gaseous Fluid. Joachim A. Smovskii, St. Petersburg, Russia.

A bearer comprising the casing divided into a series of compartments by flexible partition walls connected with and extending between the opposing sides of the casing and the inflated bags in the compartments filling the same and bearing against the partitions to form a continuous bearer.

No. 511,629.—Vulcanizing Apparatus. John W. Lyon, Providence, R. I.

In a vulcanizing apparatus, the combination with a vessel

provided with an internal flange or lugs, of an annular cover arranged to engage the top of the vessel provided with oppositely-facing packing surfaces, a removable clamping head adapted to engage or interlock with the internal lugs, and a screw-threaded member adapted to secure the parts together.

No. 511,686.—Inflatable Air-Bed or Mattress. Seth Curlin, Union City, Tenn.

An inflatable mattress, or analogous article, provided with internal transverse stays, each stay having each end thereof held between two disks or pieces which are secured to the inside of the mattress.

No. 511,918.—Artificial Frog for Horses' Feet. Lansing C. Tiffany, Springfield, Ill.

In an artificial frog, the combination, with a pad made of rubber or other suitable material, of a metal piece embedded in the same, and forming both the side and toe clips, and bolt for locking said pad in place.

No. 512,866.—Leak-Stopper. Antoine Colomes, Clermont-Ferrand, France.

In combination, with the hull of a vessel, of a bag of cellulose within the hull, a rubber cover over the bag, and a clamp for pressing the bag and cover against the periphery of the hole.

## PATENTS WHICH HAVE RECENTLY EXPIRED.

No. 185,914.—Artificial Worm-Bait for Fishing. William H. Gregg, St. Louis, Mo. (Filed January 21, 1876.) Expired January 2, 1894.

An imitation earth-worm made of India-rubber or other flexible material.

No. 186,123.—Waterproof Hose. Dennis C. Gately, Newtown, Conn. (Filed November 27, 1876.) Expired January 2, 1894.

A water- gas- or steam-proof hose composed of two or more concentric pieces of woven hose, having interposed between them vulcanized India-rubber, and provided with a vulcanized sheet-rubber lining, or an external vulcanized sheet-rubber coating, combined with such internal lining.

No. 186,208.—Atomizers. William Kennish, New Brunswick, N. J., assignor to C. B. Dickinson, Brooklyn, N. Y. (Filed November 14, 1876.) Expired January 16, 1894.

The combination, in an atomizer, of a liquid-receptacle with an elastic bulb by expanding the elastic collar of the bulb over the neck of the bottle or other vessel, thus forming a continuous chamber.

No. 186,319.—Door-Retainers. Robert E. Dietz, New York city. (Filed December 20, 1876.) Expired January 16, 1894.

A door-retainer, consisting of a looped chain covered with rubber or other soft material, and attached to a door-frame, the loop being adapted for application to the knob of the door.

## A SAMPLE OF RUBBER FROM AUSTRALIA.

TO THE EDITOR OF THE INDIA RUBBER WORLD: Enclosed I hand you herewith a sample of fig-tree gum, so called in New Caledonia, where it is found. The promoters offered to supply it in quantities at three shillings per pound. If you can do anything with it we should be glad to furnish further samples and particulars.

J. C. LUDOWICI & Co.

Sydney, Australia, January 3, 1894.

[The gum of the *Ficus* has already been mentioned in the United States consular reports from that part of the world. At the prices quoted by our correspondent it would be of no earthly use to rubber-manufacturers, as there are others that are far superior to it much less cost. If, however, a reasonable price were put upon it there is no doubt that it would find a certain outlet in the United States. An expert in rubber-manufacture mentions it as one that would compare very favorably with Chicle, although it has far more elasticity than that gum shows. Any one enough interested to wish to receive samples is invited to correspond with THE INDIA RUBBER WORLD, or with the writers of the above letter.—THE EDITOR.]

## OFFICIAL STATISTICS OF INDIA-RUBBER AND GUTTA-PERCHA.

For the United States Fiscal Year Ended June 30, 1893.

[By courtesy of the Chief of the Bureau of Statistics of the Treasury Department.]

## INDIA-RUBBER.

## I.—Imports of Crude India-Rubber, by Countries.

FROM—	Pounds.	Value.
<b>Europe:</b>		
Belgium.....	29,654	\$ 15,119
England.....	6,604,083	2,730,375
France.....	266,301	135,167
Germany.....	1,801,587	629,248
Netherlands.....	539,373	205,906
Portugal.....	1,696,301	921,923
<b>North America:</b>		
British Honduras.....	14,353	7,213
Costa Rica.....	41,367	18,292
Guatemala.....	115,294	47,721
Honduras.....	136,216	49,175
Mexico.....	140,096	41,397
Nicaragua.....	926,700	400,808
Salvador.....	49,205	12,918
West Indies—British.....	18,748	7,030
Dutch.....	300	111
<b>South America:</b>		
Brazil.....	26,749,659	11,691,956
Colombia.....	719,626	296,895
Ecuador.....	898,865	291,790
Guiana—British.....	2,256	1,083
Dutch.....	33,107	13,205
Peru.....	1,000	665
Venezuela.....	85,309	42,382
<b>Asia:</b>		
China.....	2,300	632
East Indies—British.....	593,366	149,003
Dutch.....	3,045	1,550
<b>Africa:</b>		
Madagascar.....	275,331	97,450
All other Africa.....	30,659	9,575
<b>Total.....</b>	<b>41,547,680</b>	<b>\$17,809,359</b>
<b>Total, 1891-92.....</b>	<b>39,976,305</b>	<b>\$19,718,216</b>
<b>Total, 1890-91.....</b>	<b>33,712,080</b>	<b>17,856,280</b>

## II.—Imports of Crude India-Rubber, by Customs Districts.

AT—	Pounds.	Value.
Boston.....	3,373,756	\$ 1,399,483
Mobile.....	40	10
New Orleans.....	503,459	305,307
New York.....	37,132,487	13,881,794
Philadelphia.....	6,541	3,967
Providence.....	514,774	313,500
San Francisco.....	16,643	5,577
<b>Total.....</b>	<b>41,547,680</b>	<b>\$17,809,359</b>

## III.—Exports of Crude India-Rubber, by Countries.

TO—	Pounds.	Value.
England.....	576,634	\$332,823
Germany.....	374,532	138,776
Japan.....	340	439
Netherlands.....	14,306	7,791
Quebec and Ontario.....	135,692	87,365
Russia.....	50,115	30,000
<b>Total.....</b>	<b>1,072,369</b>	<b>\$617,194</b>
<b>Total, 1891-92.....</b>	<b>1,600,834</b>	<b>\$897,371</b>
<b>Total, 1890-91.....</b>	<b>1,041,300</b>	<b>598,251</b>

NOTE.—The exports of crude India-rubber for the year, with the exception of what went to Canada, were all shipped from New York.

## IV.—Imports of Manufactures of India-Rubber, by Countries.

FROM—	Value.
Austria-Hungary.....	\$ 1,214
Belgium.....	23
Denmark.....	7
France.....	102,128
Germany.....	106,012
Italy.....	1,564
Russia.....	20
Sweden and Norway.....	19
Switzerland.....	8
England.....	123,612
Scotland.....	2,613
Ireland.....	10
Domion of Canada.....	1,162
Mexico.....	5
Brazil.....	25
Venezuela.....	10
Hong Kong.....	3
<b>Total.....</b>	<b>\$338,435</b>
<b>Total, 1891-92.....</b>	<b>\$371,580</b>
<b>Total, 1890-91.....</b>	<b>354,645</b>

## V.—Imports of Manufactures of India-Rubber, by Customs Districts.

AT—	Value.
Baltimore, Md.....	\$ 3,834
Bath, Me.....	29
Boston and Charlestown, Mass.....	29,975
Fairfield, Conn.....	179
Hartford, Conn.....	25
New Haven, Conn.....	63
New York, N. Y.....	254,615
Philadelphia, Pa.....	21,952
Portland and Falmouth, Me.....	1
Providence, R. I.....	2,725
Brazos de Santiago, Tex.....	3
New Orleans, La.....	540
Paso del Norte, Tex.....	2
Pensacola, Fla.....	10
Puget Sound, Wash.....	10
San Francisco, Cal.....	5,588
Willamette, Oreg.....	254
Buffalo Creek, N. Y.....	1
Cape Vincent, N. Y.....	12
Champlain, N. Y.....	15
Chicago, Ill.....	12,828
Detroit, Mich.....	39
Genesee, N. Y.....	29
Miami, Ohio.....	1
Milwaukee, Wis.....	580
Minnesota, Minn.....	23
North and South Dakota.....	3
Oswegatchie, N. Y.....	5
Vermont.....	142
Cincinnati, Ohio.....	2,416
Grand Rapids, Mich.....	41
Indianapolis, Ind.....	1,129
Kansas City, Mo.....	18
Lincoln, Neb.....	34
Louisville, Ky.....	454
Omaha, Neb.....	34
St. Louis, Mo.....	317
Springfield, Mass.....	85
<b>Total.....</b>	<b>\$338,435</b>

## VI.—Exports of Manufactures of India-Rubber (and Gutta-Percha), by Countries.

TO—	Boots and Shoes.	Other Goods.
<b>Europe:</b>		
Austria-Hungary.....	\$.....	\$ 1,500
Azores and Madeira Islands.....	65	
Belgium.....	2,920	18,166
Denmark.....	5,193	3,542

TO—	Boots and Shoes.	Other Goods.
England.....	113,331	347,653
Scotland.....		30,510
Ireland.....		410
France.....	19,819	73,632
Germany.....	518	109,742
Gibraltar.....		135
Italy.....		25,593
Netherlands.....	1,321	73,046
Russia.....		230
Spain.....		1,492
Sweden and Norway.....	4,927	13,362
Turkey.....	200	
<b>North America:</b>		
Nova Scotia and New Brunswick.....	18,535	14,654
Quebec and Ontario.....	29,940	272,670
British Columbia.....	9,213	8,832
Newfoundland.....	5,321	1,596
Bermuda.....	78	440
Mexico.....	1,059	62,715
Costa Rica.....	251	5,335
Guatemala.....	469	7,940
Honduras.....	18	2,918
Nicaragua.....	105	2,199
Salvador.....		3,025
Miquelon and Langley.....	4,516	35
British West Indies.....	231	5,747
Danish West Indies.....	34	1,004
Dutch West Indies.....		231
French West Indies.....		1,516
Hayti.....	5,424	808
Santo Domingo.....	244	38,294
Cuba.....	4,585	2,053
Puerto Rico.....	188	
<b>South America:</b>		
Argentina.....		3,252
Bolivia.....		201
Brazil.....	426	19,991
Chile.....	56	7,737
Colombia.....	1,770	10,431
Ecuador.....	359	1,117
Guiana—British.....		37
Dutch.....		167
French.....		27
Peru.....	35	6,300
Uruguay.....		538
Venezuela.....	416	5,334
<b>Asia:</b>		
China.....	513	1,570
Hong Kong.....	136	1,316
Japan.....	10,382	17,692
British East Indies.....		484
Dutch East Indies.....		106
Russia.....		125
<b>Oceania:</b>		
British Australasia.....	8,498	25,738
French Possessions.....		406
Hawaiian Islands.....	1,367	18,132
<b>Africa:</b>		
British Possessions.....	40	5,345
All other countries.....		91
<b>Total.....</b>	<b>\$252,391</b>	<b>\$1,357,015</b>
<b>Total, 1891-92.....</b>	<b>\$185,870</b>	<b>\$1,232,497</b>
<b>Total, 1890-91.....</b>	<b>141,679</b>	<b>1,094,764</b>

NOTE.—The exports of rubber boots and shoes embraced 410,950 pairs, as against 731,105 pairs during the preceding twelve months.

## VII.—Exports of Manufactures of India-Rubber (and Gutta-Percha), by Customs Districts.

FROM—	Boots and Shoes.	Other Goods.
Boston and Charlestown.....	\$137,564	\$166,374
New York.....	67,085	697,503
Vermont.....	28,693	536,438
All other ports.....	19,707	156,700
<b>Total.....</b>	<b>\$252,391</b>	<b>\$1,357,015</b>

## GUTTA-PERCHA.

## I.—Exports of Crude Gutta-Percha, by Countries.

To—	Pounds.	Value.
England.....	6,810	\$ 2,650
Germany.....	11,673	1,453
Quebec and Ontario.....	233	140
<b>Total.....</b>	<b>18,716</b>	<b>\$ 4,243</b>
<b>Total, 1891-92.....</b>	<b>8,557</b>	<b>\$ 5,170</b>
<b>Total, 1890-91.....</b>	<b>51,960</b>	<b>15,110</b>

## II.—Imports of Crude Gutta-Percha, by Countries.

FROM—	Pounds	Value.
Germany.....	226,964	\$ 63,329
England.....	115,140	21,567
East Indies—British.....	203,181	57,707
Dutch.....	2,300	1,304
West Indies—British.....	16,485	7,315
Dutch.....	5,730	2,880
Venezuela.....	11	6
Guiana—Dutch.....	2,507	1,330
<b>Total.....</b>	<b>582,378</b>	<b>\$155,428</b>
<b>Total, 1891-92.....</b>	<b>308,239</b>	<b>\$114,874</b>
<b>Total, 1890-91.....</b>	<b>960,835</b>	<b>164,524</b>

## III.—Imports of Manufactures of Gutta-Percha, by Countries.

FROM—	Value.
England.....	\$ 5,481
France.....	1,500
Germany.....	74,180
Dominion of Canada.....	7
West Indies—Spanish.....	5
<b>Total.....</b>	<b>\$81,173</b>
<b>Total, 1891-92.....</b>	<b>\$61,376</b>

NOTE.—These goods, to the value of \$79,393, were entered at the port of New York.

## OFFICIAL STATISTICS FOR THE CALENDAR YEAR 1893.

[Embracing Later Figures than in the Foregoing Tables.]

ARTICLES.	QUANTITIES.				VALUES.			
	Month ending December 31—		Twelve months ending December 31—		Month ending December 31—		Twelve months ending December 31—	
	1892	1893	1892	1893	1892	1893	1892	1893
<b>Imports:</b>								
Gutta-percha, crude.....	lbs. 86,301	24,900	511,334	487,970	\$ 23,266	\$ 7,608	\$ 160,385	\$ 115,136
India-rubber, crude.....	lbs. 5,159,489	5,038,353	37,469,715	39,634,706	2,349,669	2,406,771	18,121,432	17,699,254
Manufactures of Gutta-percha.....					7,415	973	61,780	50,001
Manufactures of India-rubber.....					24,180	21,056	339,544	340,000
<b>Exports:</b>								
Rubber Boots and Shoes.....	prs. 37,075	21,305	330,168	352,186	24,306	16,093	216,331	305,637
All other manufactures of India-rubber and Gutta-percha.....					144,246	108,088	1,339,040	1,235,469
Gutta-percha, crude.....	lbs. 66,513	120,704	996,550	1,846,727	34,073	51,818	535,453	900,665
Foreign manufactures of India-rubber and Gutta-percha.....						272	112	169,622

## IMPORTATIONS OF INDIA-RUBBER, MONTHLY, DURING 1893, IN TONS.

[COMPILED by the GOULD COMMERCIAL COMPANY, of New York and Boston.]

## CLASSIFICATION OF GRADES.

The following plan has been adopted in the following table:

*Parás* include Fine, Medium, and Coarse *Pará*, and *Caucho*.

*Centrals* include Ceará, Bahia, and Mangabeira, Mexican, Tuxpan, the various grades of Central American States, northern and western South America, except such as comes via the Amazon river.

*Africans* include West and East Coast and Madagascar.

*East Indian* include Assam, Rangoon, Batavia and Borneo, not Pontianak.

Our stocks include Boston imports. Any variation from other authorities in supposed stocks may be accounted for under different classifications and exports. Shipments of *Parás* between Europe and the United States are credited with the surplus balance to the proper country.

## UNITED STATES.

MONTHS.	Parás.	Centrals.	Africans.	East Indian	Totals.
January.....	1,724	127	419	51	2,321
February.....	1,321	157	547	147	2,172
March.....	972	172	307	35	1,546
April.....	1,762	123	214	63	2,162
May.....	623	134	328	29	1,114
June.....	880	118	232	85	1,365
July.....	309	90	71	36	506
August.....	417	93	76	75	661
September.....	372	83	116	85	656
October.....	763	139	326	10	1,243
November.....	612	199	129	69	1,009
December.....	1,571	125	302	38	2,036
<b>Totals.....</b>	<b>11,331</b>	<b>1,560</b>	<b>3,177</b>	<b>723</b>	<b>16,791</b>

## EUROPE.

Parás.	Centrals.	Africans.	East Indian	Totals.
604	55	438	73	1,170
345	67	506	8	926
508	29	424	24	985
534	56	420	78	1,088
666	35	436	57	1,194
306	42	390	72	810
491	26	361	107	985
534	41	401	104	1,080
787	30	437	62	1,316
566	61	455	13	1,095
753	67	433	17	1,270
682	33	449	45	1,209
<b>Totals.....</b>	<b>542</b>	<b>5,150</b>	<b>660</b>	<b>13,128</b>

A FRAUD that is affecting the manufacturers of mackintoshes is laid bare by a letter lately received by a clothing-manufacturer in Boston. It was from a lady in Newport, R. I., who had been called upon by a professed agent for a leading house with a swatch of fine samples. He sold her (to arrive later) an elegant silk-lined garment for \$11, she paying on account \$3, for which he gave a receipt. As a matter of fact he was agent for no one, had stolen the swatch, and intended only to make the \$3, as no garment was ever delivered. It is said that many others have been defrauded in this way.

As the colors of mackintoshes this season are to run to blue and black it is interesting to note that a new shade called "Titan Como" has been imported. It is a handsome greenish shade of blue and will replace the opal blues, which are expensive in textures having silk in their composition. A novelty for cotton and wool textures is Vancanceine blue. The color is extremely fast and manipulation very easy, and it is a good substitute for indigo. Colors that will change into pleasing variations under artificial light are now occupying the mind of the dyer abroad.



## A RUBBER-VINE IN BRITISH GUIANA.

THE INDIA RUBBER WORLD has been favored, by Mr. J. Rodway, of Georgetown (Demerara), with a copy of a "Report on Macwarrieballi (*Forsteronia gracilis*), a New India-rubber Plant of British Guiana," by the government botanist, Mr. G. S. Jenman. In the opinion of Mr. Jenman this vine, which reaches to the top of trees a hundred feet high, afterwards spreading out over the branches, seems to be generally dispersed over the whole of the great forest region of Guiana. It is assigned by him to the order *Apocynaceæ*, which order is best known to rubber-men through the *Landolphia florida*, of Africa. "I never in any lactiferous plant saw milk run so freely," writes Mr. Jenman. "It was also richest in rubber of any such milk I had ever examined." He found it unnecessary to make the usual V-shaped incisions to procure the milk since, "by making a simple circular cut, by drawing a knife round the stem to the depth of the bark, as much milk apparently was obtained as by removing a section of the bark." The advantage of this method would be that wounds of this character might heal quickly and permit an early repetition of the tapping, while removal of the bark would destroy or seriously injure the plant. Specimens of rubber from this source have been sent to England for experimentation. It is the opinion of Mr. Jenman that other rubber-producing plants exist in the same country.

## THE PARA RUBBER MOVEMENT.

IN the tables which follow the statistics compiled by Pusinelli, Prüsse & Co. of the exports of crude India-rubber from Pará and Manáos during 1893 have been converted from kilograms to pounds. At the foot of the first table a comparison is given with the figures for preceding years. As compared with 1892 the later figures show a smaller exportation to the United States, while a larger amount went forward to Europe.

## EXPORTS BY FIRMS.

EXPORTERS.	United States.	Europe.	Total.
Pusinelli, Prüsse & Co. ....	4,747,732	5,613,185	10,360,917
La Rocque da Costa & Co. ....	7,161,521	1,701,920	8,863,441
Norton & Co. ....	5,414,831	...	5,414,831
Rudolph Zeitz. ....	512,393	2,873,807	3,386,200
Bank of Manáos. ....	1,979,443	24,904	2,004,347
Singlehurst, Brocklehurst & Co. ....	1,379,037	762,832	2,141,869
Denis Crouan & Co. ....	...	1,344,360	1,344,360
K. F. Sears & Co. ....	487,775	841,304	1,329,079
B. A. Antunes & Co. ....	468,479	437,287	905,766
J. H. Andresen. ....	349,388	418,420	767,808
Silva Santos & Co. ....	368,302	410,212	778,514
Edmund Reeks. ....	567,690	...	567,690
A. Berneaud & Co. ....	239,884	307,854	547,738
Marius & Levy. ....	111,412	352,825	464,237
A. de Freitas & Co. ....	...	433,468	433,468
H. de la Baume. ....	311,802	141,499	453,301
Kahn Polack & Co. ....	1,868	364,491	366,359
Freitas Sobrinho & Co. ....	290,622	47,515	338,137
Luiz Schill & Sobrinho. ....	48,481	242,301	290,782
Samuel & Co. ....	213,422	55,594	269,016
Sundry small shippers. ....	304,759	744,724	1,049,483
From Serpa. ....	...	9,092	9,092
Total. ....	24,958,841	17,127,594	42,086,435
Total, 1892. ....	25,149,429	15,570,770	40,720,199
Total, 1891. ....	23,829,360	15,307,329	39,136,690
Total, 1890 (a). ....	21,137,177	15,004,652	36,141,829
Total 1889 (a). ....	20,004,006	14,946,888	34,950,894

(a) Statistics of Reimers & Meyer.

## EXPORTS BY GRADES.

QUALITIES.	United States.	Europe.	Total.
Fine. ....	13,291,737	11,208,956	24,500,693
Entrefine. ....	2,705,456	1,760,451	4,465,907
Sernamby. ....	7,082,798	3,424,225	10,507,023
Caucho. ....	1,878,850	733,962	2,612,812
Total. ....	24,958,841	17,127,594	42,086,435

## EXPORTS BY MONTHS.

The figures which follow have been compiled from the monthly statements, during 1893, of Norton & Co., of Pará, the tons being converted into pounds. The difference in methods of making these reports from those of Pusinelli, Prüsse & Co. will account for the slight difference in the totals:

MONTHS.	ARRIVALS.	SHIPMENTS.		
		United States.	Europe.	Total.
Stock. ....	1,707,200	...	...	...
January. ....	3,300,000	2,202,200	1,386,000	3,588,200
February. ....	6,600,000	2,620,200	748,000	3,368,200
March. ....	4,840,000	4,015,000	1,738,000	5,753,000
April. ....	2,365,000	2,413,400	1,504,800	3,918,200
May. ....	1,826,000	1,544,400	1,126,400	2,670,800
June. ....	1,914,000	1,091,200	1,091,200	2,182,400
July. ....	1,980,000	959,200	1,069,200	2,028,400
August. ....	2,640,000	1,062,600	1,216,600	2,279,200
September. ....	2,970,000	1,555,400	1,744,600	3,300,000
October. ....	4,114,000	1,531,200	1,548,800	3,080,000
November. ....	3,784,000	1,988,800	2,285,800	4,274,600
December. ....	7,095,000	3,929,200	1,722,600	5,651,800
Totals. ....	45,135,200	24,912,800	17,182,000	42,094,800
Deliveries. ....	42,094,800	...	...	...
Stock. ....	3,040,400	...	...	...

## RUBBER IN THE CONGO FREE STATE.

ACCORDING to information gathered by the *Independence Belge* (Brussels) the rubber industry of the Congo Free State has, during the last few years, grown to a marked extent. The development has been remarkable. The rubber is obtained in the usual way, by making incisions in the *Landolphia florida* vines, which are found in every part of the country, but which flourish most in the districts of Ubanga, Oullé, Mangalla, and Kassai. The following table will show the quantities of rubber which the Congo Free State has produced and exported in the period between July 1, 1886, and July 1, 1893:

	Kilograms.	Value.
In 1886 (July-December). ....	18,069	\$15,000
In 1887. ....	30,050	20,600
In 1888. ....	74,294	50,000
In 1889. ....	131,113	90,000
In 1890. ....	123,666	110,000
In 1891. ....	81,680	65,000
In 1892. ....	156,339	125,000
In 1893 (January-June). ....	116,301	90,000

RUBBER shoes which have worn through at the heels, which is usually their most vulnerable spot, may be turned into serviceable footholds by cutting out the bottom of the heels and the adjoining bit of sole between the heel and the ball of the foot. So says an enterprising New York paper. It would be interesting to know who would wear such a shoe after it was cut up.

**WE ARE AWARE—**

Nearly Four Million  
Pairs Sold in Three  
Years.

That the Name  
**STORM SLIPPER**

Is well chosen.

We Trade-Marked it for that reason.

*A GOOD NAME*

*FOR A*

*GOOD SHOE.*



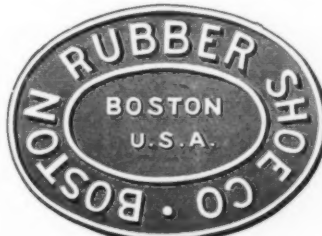
**But the Name—**

Belongs to us—to our Shoe. No one can apply our name, **STORM SLIPPER** to any other make, by Advertising, or in any other way, without violating the United States Trade Mark Law.

A RUBBER SHOE  
IS ILLEGALLY CALLED A

***Storm Slipper***

UNLESS IT BEARS THIS



*Trade Mark.*

## NEW GOODS AND SPECIALTIES.

**A**N excellent device for nasal catarrh is shown in the accompanying illustration. It is designed to take the place of the ordinary douche and atomizer, which have been used to force the remedy through the nasal cavities often irritating the rough honeycomb tissues that are filled with poisonous matter. By the use of the "Success" syringe, however, the remedy can be directly applied without danger. This is attained by inserting the soft rubber tube into the nostril and pressing the bulb until the whole cavity is thoroughly irrigated. It is manufactured by William H. Armstrong & Co., No. 77 South Illinois street, Indianapolis, Indiana.



"SUCCESS" ALL-RUBBER NASAL SYRINGE.

## THE INVISIBLE SELF-ACTING RUBBER.

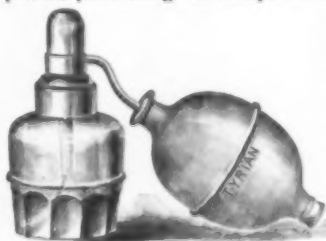
A NEW rubber shoe, designed particularly for city wear, and for keeping the soles of thin shoes dry, is shown in the accompanying illustration. When fitted to the foot it simply covers the sole of the shoe, leaving the uppers absolutely free from rubber covering—so free that the shoe can be blacked



and worn with this rubber and without disturbing the polish. Aside from this, to people to whom an ordinary rubber shoe is uncomfortable because of its drawing action, it is a great boon as the upper of the shoe has no air-proof covering over it. It might be thought that such a shoe would easily drop from the foot, but in order to prevent this a bead is formed which fits into the crease of the welt, and in order to overcome the bulging at the instep a short ridge of rubber runs from side to side across the shank, drawing the sides of the rubber together and holding it ever firmly in position. This shoe should be particular popular with those who affect patent-leather shoes, as rubber in connection with such footwear soon causes the "patent" to expire. Manufactured by the Boston Rubber Shoe Co.

## "TYRIAN" NO. 3 OIL ATOMIZER.

THIS atomizer has new and desirable features such as a guard tube extending into the bottle through which the liquid passes, preventing its escape in whatever position the bottle may be placed. This admits of its becoming part of a traveler's kit and overcomes one of the most serious faults with many oil atomizers, that is, the oil escaping upon the bottle or bulb and soiling the hands or clothing. The atomizer is so constructed that the air in



NO. 3 OIL-ATOMIZER.

passing through the air point completely surrounds the liquid point thus insuring a fine spray without dripping. The liquid tube being attached to the atomizer by a screw thread it can be readily removed and cleaned, and does not easily get out of order. The bulb which is of fine stock is furnished with an aluminum valve. This responds very quickly. This atomizer is used for spraying glycoline, cosmoline, albolene and all of the various liquids of the consistency of oil. It may also be used for spraying heated ointments. Manufactured by the Tyer Rubber Co., Andover, Mass.

## THE "BOSS" LAWN-SPRINKLER.

THIS sprinkler although not new enough to be brought under the category of new goods may certainly take its place as one of the leading specialties of this season. It is so simple that it hardly requires explanation. With the cock turned one way a straight stream is thrown through the nozzle. A half turn however changes it into a spray of almost any degree of fineness desired. The pipe is made of the very best material. Manufactured by the Belknap Manufacturing Co., Bridgeport, Conn.



"BOSS" LAWN-SPRINKLER.

## A RUBBER MOUTH-PROTECTOR.

AN appliance for foot-ballists or base-ballists which is very simple and most excellent is a rubber mouthpiece. It is made of the best quality of Pará rubber and gives protection to the mouth and teeth. It is perforated so that the runner may breathe through the mouth if necessary. As a matter of fact it is said that these mouth pieces have saved many fine sets of teeth, and have protected players from serious injury. Manufactured by Wright & Ditson, Boston.



RUBBER MOUTH-PROTECTOR.

## THE LILY PURE GUM SHIELD.

A VERY popular specialty manufactured in the City of Churches is shown in the accompanying illustration. It is a pure-rubber dress-shield. The rubber is treated by a secret vulcanizing process which brings out a very fine soft surface and is both odorless and impervious. The goods are very elastic, are of the most correct shape, and of the proper weight and of elegant finish. All this is attained by special machinery and by the most careful attention to the details of manufacture. This shield, which is known as the "Lily," is manufactured by the Brooklyn Rubber Co., No. 397 Sumner avenue, Brooklyn, N. Y.





## THE CHASE MUCILAGE-HOLDER.

A NEW device for holding mucilage is shown in the accompanying illustration. In this the bulb which holds the mucilage has a closed outer end and is provided with a central flexible flange, resting upon, and hermetically sealing, the mouth of the cup, while at the same time it centrally registers the brush in the cup and stops the evaporation of the few drops of water



CHASE MUCILAGE-HOLDER.

which are placed therein to create a damp atmosphere and keep the brush pliable. By this means the mucilage retains its normal consistency, is under control and its flow being wholly due to the pressure given the bulb every drop is thus utilized. The brush which is rigidly cemented into its tapered socket is provided with a central outlet tube the inner end being covered with a porous disc to prevent drip. This device seems to be really an excellent one as it has no cap, cork, plug, sponge, suction tube, felt-spreader, or any such arrangement which coming in contact with the mucilage renders the gum and the means of applying both troublesome and ineffective. Manufactured by James Chase, Rochester, N. Y.

## IT MAKES WALKING EASIER.

WHAT is known as the elliptical spring heel for arctics, rubber boots and shoes, or leather footwear, is shown in the accompanying illustration. It is made on purely scientific principles for obviating the shock to the wearer as the foot strikes the ground in walking. It is found that those who use this spring heel are not troubled with stiffening of the muscles of lower limbs, and it helps one to walk more rapidly and easily without loss of strength. Manufactured by Edward Roche, No. 43 Jackson street, Providence, R. I.

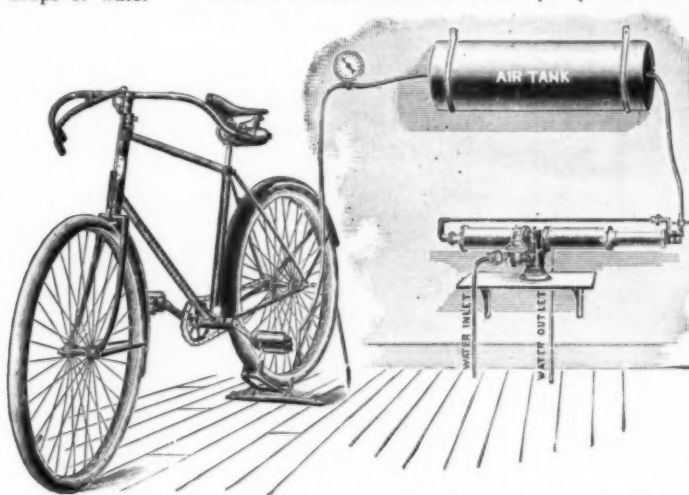


ELLIPTICAL SPRING HEEL.

## FOR INFLATING PNEUMATIC TIRES.

SINCE the pneumatic tire has come into use and has come to stay, numbers of arrangements have been patented for inflating the tires, but none of them are simpler or more effective than that shown in the accompanying illustration. This consists

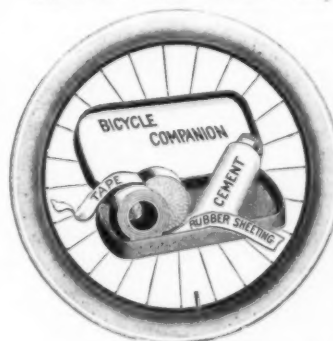
simply of a diminutive water motor which is run with a surprisingly small amount of power and fills the air tank with any pressure needed. It is fitted with a gage so that when the requisite pressure is reached, the pump may be stopped. A pipe leads from the tank down to the floor so that it may be easily attached to the valve of the tire. For bicycle-dealers, hardwaremen, and manufacturers, this pump is commended as



an excellent device. Manufactured by Bishop & Babcock, Cleveland, Ohio.

## THE BICYCLE COMPANION.

WHAT is known as the "Bicycle Companion" is represented in the accompanying cut. It is a little traveling outfit that is a necessity to every rider of the wheel. The kit contains rubber sheeting, rubber tape, emery-paper, and a large tube of pure rubber cement made especially for bicycle-repairing; all of which is put up in a compact box that may be easily carried in the vest



pocket. Manufactured by the Boston Rubber Cement Co., No. 200 Devonshire street, Boston.

## THE "AMERICAN CHIEF" FIRE-HOSE.

A FIRE-HOSE which is said to combine the very best features of cotton and rubber hose is that which is named above. The fabric on which it depends for strength is radically different from the ordinary fire-hose duck, not only in material but in construction. The rubber compound is also a new departure. It is made up of fine Pará rubber and is said to have none of the ingredients employed in ordinary rubber compounding; that is, it is without zinc, whiting, litharge, barytes, lead, sulphur, or other earthy matters. The hose weighs but 50 pounds to the section after being coupled, and is as soft as a glove. A section of it 50 feet



long with couplings can be coiled within a 24 inch circle. The thickness of the hose is ample for wearing purposes and the extreme lightness is accounted for by the exceeding purity of this stock. A section of this hose is capable of standing a pressure of 450 pounds to the square inch, and at working pressure the elongation does not exceed 6". Manufactured by the New Jersey Car Spring and Rubber Co., Jersey City, N. J.

#### THE "FAVORITE" LADIES' MACKINTOSH.

A FEATURE of the business in ladies' mackintoshes this year is the fact that for certain trade they are displacing cloaks. Of course, the purchasers are not those who can afford \$300 cloaks, but are to be found among the middle class who make every dollar count. As a matter of fact, they are wise in this preference for the mackintosh, for the reason that they can get a much better-fitting, and better-wearing garment than the same amount would secure in a cloak of any kind. For example, a \$15 cloth cloak, to be warm, must be heavy, and it is therefore weighted with shoddy and often made almost wholly of cotton. A mackintosh at that price, however, does not need weight, for the rubber keeps out the cold; hence the cloth surface may be finely-finished wool, and bear the impress of value in every thread. The treasurer of the Clifton Manufacturing Co., who is a close observer of the tendencies of trade, remarked: "So impressed was I with the fact that a host of women, particularly those finding employment in the cities, were buying mackintoshes in the place of cloaks that I have been pushing our 'Favorite' for just that trade. Our sales have been most satisfactory and it is a matter of self-gratulation to me that we have been able to keep so many working-girls and others to be better, warmer, and more economically dressed this winter."



"FAVORITE" LADIES' MACKINTOSH.

WHAT are known as Hall's electric bandages are having a large sale among horsemen. They are bandages made of a compound similar to that used in friction-tape. Applied to a spavined or lame horse they make him practically a new animal. It is a fact that horses so badly spavined that they could not trot five minutes without breaking down, when swathed in these bandages are able to go on the track and do as well as in their best days. The bandages are put up a dozen in a box, and are manufactured by Frank E. Hall, Boston, Mass.

#### DEATHS IN THE RUBBER TRADE.

COLONEL AARON SAWYER TAFT, who died at his home in Worcester, Mass., on February 5, was born in that city, September 24, 1860. In 1877 he entered the Highland Military Academy, from which he was graduated with honors, afterward entering the rubber business with his father, the late John E. Taft. Upon the death of his father Mr. Taft assumed the management of the Goodyear Rubber Co., No. 324 Main street, Worcester. He held the management after the name was changed to the Worcester Rubber Co. He was an energetic business man, and had a host of business friends. Two years ago he bought the interest owned in the Worcester Rubber Co. by J. Francis Hayward, of Boston, for whom he had acted as manager.

Colonel Taft took great interest in military matters. He was elected first lieutenant of Company C, Second regiment, M. V. M., January 3, 1884. He was elected second lieutenant of Battery B, January 12, 1887. In both branches he was not only an officer of fine appearance, but was unusually efficient. In 1888 he was appointed adjutant on the staff of Lieutenant-Colonel W. S. B. Hopkins, commander of the Worcester Continentals. In 1890 he was elected, upon the retirement of Colonel Hopkins, lieutenant-colonel of the Continentals. No commander of the battalion was ever more popular. He was the life of its affairs—a model officer, excellent tactician, and royal entertainer.

The funeral services on February 8, at the First Universalist church, at Worcester, were largely attended by the military and by friends in other circles, including a large delegation from the rubber trade in Boston.

WILLIAM W. SINCLAIR, who died early in the month at Dallas, Tex., at the age of thirty-seven, was born in Jersey City, and was long a resident of New York. Until four years ago he was engaged in the rubber-goods trade with his brother, Walter S. Sinclair, No. 136 Chambers street, New York.

WILLIAM HEATON, manufacturer of leather, rubber, and cotton belting, and mechanical rubber goods, at No. 64 North Fourth street, Philadelphia, died on February 1 in his fifty-ninth year. Mr. Heaton's father came to America from Bolton, England, in 1836, and established the Philadelphia house in that year. He died in 1886, leaving the business to his son, who in turn leaves it to his son, also named William Heaton.

JOSEPH HOLMES died at Norwich, Conn., January 15, aged seventy-six years. He was for more than thirty years superintendent of the Hayward Rubber Works at Bozrahville, Conn., the plant formerly used as a rubber-grinding mill by the old company. Mr. Holmes was a stockholder in the Hayward company. For ten years he had not been actively employed in any business. He was the father of a large family and left a comfortable property.

JOSEPH M. BRIDGE, who died at Flushing, L. I., on January 25, at the age of seventy-two, entered the employment of the Beacon Dam Co., at Beacon Falls, Conn., in 1856. The works were removed to College Point in 1861 and were incorporated with the Enterprise Rubber Works (now the India Rubber Comb Co.) in 1867, Mr. Bridge retaining his position. He resigned his connection with the company in 1889, when he went to Manistee, Mich., to live with his son. The climate there not agreeing with him, he returned to Long Island a short time ago with a view to entering the rubber-works again.

JAMES DUNN, a bookkeeper for the India Rubber Comb Co., died at College Point, L. I., on January 19, at the age of twenty-four years.

## AN ANSWER FROM SENOR ROMERO.

TO THE EDITOR OF THE INDIA RUBBER WORLD: I have seen in your issue of December 15 a communication from Mr. F. O. Harriman, C. E., dated at Jaltipan, Vera Cruz, Mexico, on October 30 last, commenting on my letter published in your October number, in which I criticised his former article about his Tehuantepec, India-rubber and coffee plantation.

You know very well that my letter was not written for publication, and that I only consented to its insertion in your paper after your solicitation, and because I supposed that the discussion of this important subject would do some good to the public at large, and especially to the coffee and India-rubber industries in Mexico. Far from having any intention detrimental to any of those industries, my well-known interest in both of them made me write my letter, as I think I am the originator and promoter of India-rubber planting in Mexico, and I have given a great deal of my time—at least two consecutive years—to coffee-culture, having started myself a coffee and an India-rubber plantation in the State of Chiapas, in southeastern Mexico.

Perhaps I was too sweeping in my remarks about coffee-planting in the isthmus of Tehuantepec, due to the fact that my official duties at this capital leave me very little time to consider carefully and maturely other subjects, and that my letter to you was for that reason written in great haste. What I meant to say,—because I am convinced of it by experience and study,—is that hot lands are not the best for coffee, and that as a general rule low lands are hot, and in the isthmus of Tehuantepec lands are low. As Mr. Harriman says the highest elevation is only 900 feet above the level of the sea, I concluded that they could not be the best lands for coffee.

But Mr. Harriman states in his last letter that the lands on the isthmus are not hot, and as he knows them well and I have only passed through some of them,—never having been at Jaltipan,—his lands may be very good and perhaps the best for coffee, and I sincerely hope they are so, as I have the best wishes for his success, as well as for the success of anybody else who would contribute to the development of the coffee industry in Mexico, which I think is one of the greatest sources of wealth in that country.

As is well known, the temperature of a place depends on several factors, the principal one being its elevation above the level of the sea; but this factor may be affected and even changed by others, like the currents of air, dampness, etc. The atmospheric conditions of Jaltipan, as described by Mr. Harriman, doubtless may give that place, located 900 feet upon the sea level, a temperature corresponding in other localities to a much higher elevation (say from 5000 to 5500 feet), which I think is the best location for coffee-culture. I am sure, too, that the great currents of air passing through the isthmus of Tehuantepec, which Mr. Harriman describes so well, and which I have experienced while passing through that isthmus, will dry the land, and may make it necessary to use shade for the coffee-trees when they are young and when most of the surface of the land would be exposed to the winds; but even in that case I should think that when the coffee-trees are grown, and they shade the ground with their own leaves, the yield of the plantation per tree would be increased by pulling down the shady trees.

I am still firmly of the opinion that as a general rule, recognizing of course that there may be exceptions to the rule itself but not to its principle, coffee is the product of temperate and not the hot climates,—and that it is better therefore to plant it high rather than low. Mr. Taylor's quotation of Mr. Hugo Finck's opinion, quoted by Mr. F. O. Harriman, to

the effect that coffee-trees need shade when planted below from 3000 to 3500 feet, and do not need it when planted higher I rather think confirms my theory.

I have also read Mr. J. P. Harriman's letter, dated at Woonsocket, R. I., November 9, published in the same issue of your journal, commenting on my previous communication on this subject. My remarks already made to the other letter will answer his, and I will only add that if coffee-trees yield in Jaltipan or around there  $3\frac{1}{2}$  pounds per tree, as he says they average at the Pena Blanca plantations, I would not hesitate in saying that the isthmus lands are the best in the world for coffee-raising, as what I consider the best lands in Mexico for that industry, do not average in a large plantation more than one pound per tree per crop, although individual trees may yield considerably more. Nobody will be happier than myself if such is the fact, as I feel such a great interest in the development of that industry in Mexico.

To Mr. F. O. Harriman and his associates, should he have any, I would venture to say,—should they allow me to volunteer my advice,—go on with your plantation and increase it as much as you can, being sure that if the yield is such as expected, you have the best coffee-lands in Mexico, and possibly the best in the world. But should you for any reason be mistaken in that regard, I would advise you still to go on, as a plantation already begun, when the land has been secured and there is sufficient labor, is far better, even in case it has not the best conditions as compared with others which would be only imaginary ones. Coffee production is such a lucrative business that it will yield very large profits, even in case it is not undertaken under the best conditions.

Mr. J. P. Harriman asserts that coffee has heretofore been planted in high lands, and considers that planting it in low lands, which are generally more fertile, shows a great improvement, and mentions in support of his theory an experiment to introduce wheelbarrows in Tehuantepec, the reclaiming of large tracts of the "great American desert" by artificial irrigation, and of deepening shallow rivers by constructing jetties. To my knowledge coffee has been planted so far almost exclusively in the low lands, and it is only recently and in a few places where its culture is more advanced, and experience has shown the advantages of high lands, that these are preferred.

Nobody could deny that men can through industry and labor assist nature very materially in the discharge of its functions, as it is the case in manuring worn-out land, in irrigating arid tracts, which otherwise would be unproductive, etc., but I perceive a great difference between assisting the forces of nature and trying to change them. When a crop is cultivated out of its own natural zone, I think the effort is in the second direction. Even in case of man's industry assisting the forces of nature, I imagine it is better to use land which requires no such assistance. I would make a farm of virgin land, rather than of worn-out land which needs to be manured, and of a moist land needing no irrigation, than of arid land which cannot be productive without irrigation, all other circumstances being equal.

I do not understand the hint to wheelbarrows in Tehuantepec, unless it is to compare me with the native Indians who would not use them until they had taken out the wheels and placed a man at each end of the barrow. I am as firm a believer in progress as Mr. Harriman can be, and I do not think my views on coffee culture are inconsistent with progress, but should I be mistaken I will be glad to acknowledge my error when I am satisfied that I have made any, as I am always open to conviction and I think it is honorable for anybody to recognize his own mistakes.

M. ROMERO.

Washington, D. C., December 16, 1893.



## A NEW RUBBER INSULATED CABLE.

THE largest submarine cable ever manufactured or laid in the United States was stretched under the East river on January 29, from the foot of Thirty-eighth street, in New York, to Long Island City. It will connect the uptown exchanges of the Metropolitan Telephone and Telegraph Co. in New York with the exchanges of Greenport, Astoria, and Flushing, taking the place of six other cables which have become worn out. The cable was satisfactorily laid from the steamer *Western Union*, owned by the Western Union Telegraph Co.

The outside diameter of the cable is  $2\frac{3}{4}$  inches. It is 5000 feet long and weighs  $21\frac{1}{2}$  tons. It contains twenty conductors,



A LARGE TELEPHONE SUBMARINE CABLE.

[By courtesy of the *Electrical Review* (New York).]

each of which consists of three strands of .028 of an inch pure soft copper wire. This cable was designed for metallic-circuit telephone working, each part to be used as a metallic circuit. In making the cable each of the twenty conductors was insulated with an evenly-distributed seamless covering of safety submarine rubber compound to an outside diameter of .25 of an inch, then served with a wrapping made of light tarred tape. In cabling the conductors a central core was first formed of a group of four of the Tate insulated conductors laid up helically with a jute serving, the lay of conductors being about six inches and the jute serving so applied as to make a cylindrical core of the group of four. This core is protected with a covering of light tarred tape. The remaining sixteen conductors are twisted in pairs with a twist six inches in length, each pair laid up with a jute serving so applied as to make a round core. The eight pairs of conductors so formed are laid helically about the central core with a lay of eighteen inches, their direction being opposite to that of the central core. The cable thus formed is protected with one covering of heavy tarred tape and then served with two layers of tarred jute. Before the jute serving is placed an armoring of 22 galvanized iron wires each of No. 3 B. W. G., put on without twisting and with a lay of eighteen inches. Above the armoring are two coverings of hemp laid on in reverse directions, each covering separated with a preservative compound. The completed cable is then treated with a liberal coating of a mixture to prevent the turns from sticking together on the wheels.

This cable was made by the Safety Insulated Wire and Cable Co., Nos. 225-242 West Twenty-eighth street, and Nos. 232-242

West Twenty-ninth street, New York, whose treasurer and general manager, Leonard F. Requa, has supplied the above details to THE INDIA RUBBER WORLD.

## WHY MR. PAINE WAS INDIGNANT.

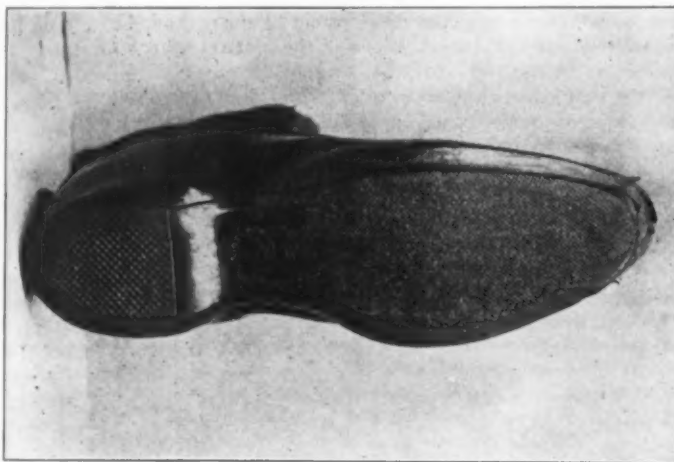
THE sales-agent of the American Rubber Co.—Mr. E. H. Paine, of Boston—was in a state of mind when the editor of THE INDIA RUBBER WORLD dropped in to see him.

"Do you know," said he, "that rubber boot-and-shoe manufacturers have to stand a deal of imposition? Look at this boot. It was returned by a jobber as damaged. It was a 'second' to begin with. Some stingy soul bought it, wore it until the heel was worn down as thin as cardboard, until the sole was worn through, and then returned it as defective. If the upper had cracked and given way I might have thought it was the fault of the boot, but as it is I think it is outrageous."

"But why was it taken back at all?"

"Oh, the wearer was probably a good customer for leather goods, and the retailer did not have the sand to deny him. So he sent the boot back to the jobber, received a new pair for nothing, and we stand the cost. I should like to know what is to hinder that fellow from having new boots all the rest of his life for nothing. Now you will agree that rubber-shoe manufacturers are willing to stand behind their goods. If there is a fault due to defective workmanship we always father it and make the loss good, but to have those absurd claims pressed upon us, and to be forced to stand them, is simply maddening. There ought to be an instant and effective stop put to all of this returning business."

"I have here a photograph of a shoe that was being worn in a rubber factory. If you look at it closely you will see that the leather boot inside of it is at least two sizes too large for it. The



A SAMPLE RETURNED SHOE.

consequence is that the upper, at the toe and the sides, is stretched over the leather sole and is made a part of the sole of the rubber. Now the upper was not made to walk on, and it therefore wears out in no time, and then the rubber is blamed. If such a thing is done in a rubber factory, what will outsiders do? Certainly they won't be any more careful, and all of the troubles that come from this ill fitting and abuse of rubber foot-

wear comes back upon the manufacturer, and we have to settle. Suppose you put this photograph in THE INDIA RUBBER WORLD and say to wearers of rubbers that we are growing very weary of this sort of thing, and propose to call a halt, and that at once."

### THE INVENTOR OF BAILEY'S FAMOUS RUBBER BRUSHES.

PROBABLY no man in the rubber business has achieved a more remarkable success in marketing small specialties than has the subject of this sketch. C. J. Bailey was born in Jackson, Mich., and his first venture in business was in the dry-goods line in the city of Lynn, Mass. He was there four years and afterward went into the wholesale lace business in Boston.



C. J. BAILEY.

In this he worked up a large business, so large that he went to Europe and started in the manufacture of laces in Nottingham, England, in the year 1881. The firm was then Clapp & Bailey. While in this business he secured remarkably large lists of customers, at one time having 40,000 customers on his books. After a time the business fell off and he purchased his partner's interest and then added a line of stationers' goods. About this time, as he was trying to make an eraser of a brush pattern that should suit him, he made a rubber toilet-brush, and instantly seeing what an opportunity there was for marketing them, he had molds made and began to push them. It is said that at the present time millions have been sold and the business increases every year. He took the agency of the B. F. Goodrich Co. in 1886, and has since then been their New England representative. Aside from the rubber brush, which has had such a wonderful sale, he has invented and patented a great variety of small toilet articles in rubber, and also two popular rubber shoes which have had large sales. On his specialties he has taken out French, German, and English patents, easily selling them to foreign manufacturers, after they were well started in this country. Mr. Bailey is the proprietor of one of the finest rubber stores in Boston, in which he does both a wholesale and retail business. Aside from this he numbers his customers by the thousands the world over.

### THE MACHINES THAT MAKE MARVEL SHOES.

YEARS ago a well-known inventor in the rubber-goods line tried hard to make an unlined rubber shoe. He did make some good ones, but the percentage of damaged ones was so large that the business was far from successful. He demonstrated, however, that an unlined shoe, when perfect, was a most desirable article of footwear. During the years of his experimenting in one line, an inventor at the Woonsocket Rubber Co.'s works in Rhode Island was at work on another line. He was attempting to make an unlined shoe that should be shaped and cured in a mold. How much money or time

was spent in this experimenting has never been told. Suffice to say that in time he succeeded in producing machines, and when they were fully perfected, shoes were made in a long series of exhaustive tests inaugurated to discover if they had any "outs" about them. When it was found that everything was perfect the Marvel Rubber Co. of Woonsocket was formed, with William B. Bannigan as general-manager, and large numbers of machines were built and a plant installed for turning out molded rubber shoes. Few of the rubber-manufacturers and fewer still of the rubber-dealers have ever seen these machines; the next best thing, however, is to see pictures of them, which are herewith presented. Figure 1 shows the machine open. On the vertical part will be seen the matrix which forms the sole of the shoe, while in the center of the machine, resting upon a skeleton standard, is shown a shoe that has just been molded and vulcanized. Below this, were the standard to be dropped out of sight, would be seen the other half of the matrix which forms the outside of the upper. The inside is shaped by the last within the shoe now resting upon the top of the standard. The process of manufacture is exceedingly simple. A piece of rubber is put into the lower matrix after having been cut roughly in the shape of the upper. Another piece is put on the top of the last and the machine closes together as shown in Figure 2, the heavy roller exerting a pressure similar to that given by the screws of a steam-press. The matrices are hollow and filled with steam, so that the heat is applied directly to the rubber and the process of vulcanization is finished in five minutes, after which the machine is opened and a perfect shoe is shown. These shoes are without doubt the prettiest pieces of molded footwear that the world has ever seen, and, placed in the window of a shoe-store, they always attract attention. It has been found that they wear wonderfully well and are having a wonderful sale.

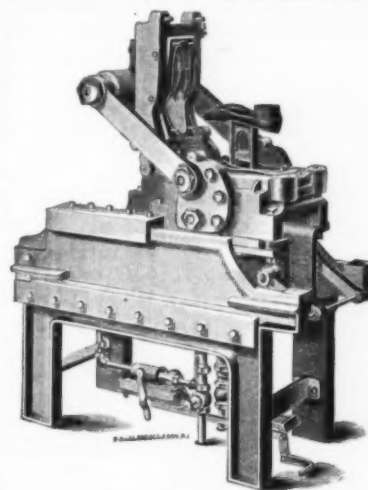


FIG. 1—THE MACHINE OPEN.

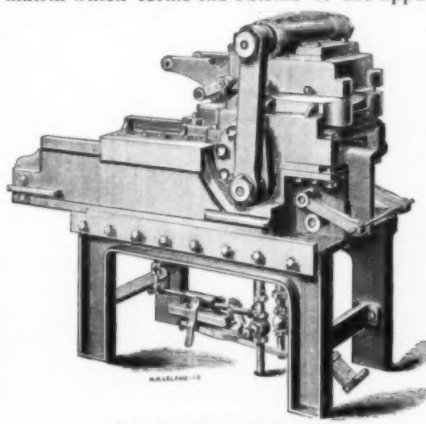


FIG. 2—THE MACHINE CLOSED.

RUBBERS should never be packed with leather shoes. The contact injures the wearing qualities. Rubber goods should always be kept in a uniformly cool place,

## RUBBER-CLOTHING COMPOUNDS.

A SUBSCRIBER to THE INDIA RUBBER WORLD writes that, noticing from time to time in the columns of this paper compounds for making up different rubber goods, he takes pleasure in sending several for publication as being of possible interest to other subscribers. A selection from the lot contributed will be found below:

GOSSAMER FINISH.		GOSSAMER COMPOUND.	
	Pounds.		Pounds.
Pará rubber.....	16	Pará rubber.....	8
Paris White.....	8	Paris White.....	24
Black.....	2	Black.....	2
Shellac.....	4	Shellac.....	$\frac{1}{4}$
Sulphur.....	$\frac{1}{4}$	Coal-Tar.....	$\frac{1}{4}$
		Sulphur.....	$\frac{1}{4}$
ELECTRIC COMPOUND.		ELECTRIC.	
Pará rubber.....	12	Pará rubber.....	12
Zinc.....	18	Zinc.....	18
Litharge.....	$\frac{1}{2}$	Paris White.....	12
Lampblack.....	2	Litharge.....	1
Sulphur.....	$\frac{1}{2}$	Lampblack.....	2
		Sulphur.....	$\frac{1}{2}$
TRANSPARENT GOSSAMER.		FIRE SHEETING COMPOUND.	
Pará rubber.....	12	Pará rubber.....	12
Central rubber.....	12	Recovered rubber.....	16
Shellac.....	4	Paris White.....	10
Oil Substitute.....	4	Litharge.....	5
Sulphur.....	$\frac{1}{2}$	Lampblack.....	2
		Coal-Tar.....	1
		Sulphur.....	.5 ounces
COAT COMPOUND.		DULL FINISH COMPOUND.	
Pará rubber.....	12	Pará rubber.....	6
Paris White.....	10	Recovered rubber.....	40
Litharge.....	5	Rubber Substitute.....	$\frac{1}{2}$
Lampblack.....	2	Litharge.....	3
Coal-Tar.....	1	Coal-Tar.....	$\frac{1}{4}$
Sulphur.....	.5 ounces	Lampblack.....	2
		Paris White.....	6
FRICTION.		Sulphur.....	$\frac{1}{4}$
Central rubber.....	14		
Recovered rubber.....	16	COAT-MAKERS' CEMENT.	
Paris White.....	20	Pará rubber.....	24
Litharge.....	5	Whiting.....	12
Lampblack.....	1	Litharge.....	8
Resin.....	.5 ounces	Zinc.....	4
Sulphur.....	.7 ounces	Resin.....	$\frac{1}{2}$
		Lampblack.....	1
WATER FINISH FOR LUSTER COATS.		Sulphur.....	$\frac{1}{2}$
Water.....	2 gallons.		
Shellac.....	2 pounds.		
Bone-black.....	4 ounces.		
Ammonia.....	$\frac{1}{2}$ pint.		

It is stated that all of the foregoing compounds are adapted to cure in the same heat. This is of course what is known at the "dry heat," slowly raised to 240° F., the "getting up" consuming two hours. It is then held 3½ hours, making the whole 5½ hours in length.

## THE NEW BROOKLYN RUBBER CO.

SEVERAL years ago two brothers started a small concern in Brooklyn, N. Y., for the manufacture of dress-shields. Their beginning was very modest, and about the only machinery owned was a single sewing-machine. They were willing to work, however, and from the first they prospered. At the end of ten years they have a fine plant, and, beginning with this month, they take up a general line of druggists' sundries and dental rubber goods and adopt the name of Brooklyn Rubber Co. in place of the Brooklyn Shield Co. A visit to the factory at Nos. 397-401 Sumner avenue, Brooklyn, disclosed a three-story brick building 170x43 feet, where about 100 hands are employed—most of them on dress-shields of the pure-gum variety. The mechanical plant of the factory is particularly good. There are two boilers of 200 horse-power, one engine of 115 horse-power, and another of 30 horse-power, a Birmingham calender

two grinders, a washer, vulcanizing oven, and numbers of special machines invented and built in the factory to do certain parts of the work. Now that the additions to the plant are completed it is the plan of the proprietors, the Rindskopf Brothers, to at once begin the manufacture of dental rubber, and dental dam, Brundage rubber, elastic bands, water-bottles, and various specialties in their lines. They offer also to do calendering for the trade, for which business they have excellent facilities.

## RUBBER ARRIVALS AT BOSTON.

BOSTON arrivals of India-rubber (crude) for November and December, 1893, were as follows:

	POUNDS.
Nov. 8.—By the <i>Angolan</i> =Liverpool:	
Reimers & Meyer, Africans.....	28,350
Nov. 13.—By the <i>Rialto</i> =Antwerp:	
Reimers & Meyer, Africans.....	35,540
Nov. 22.—By the <i>Georgian</i> =Liverpool:	
Africans.....	1,575
Nov. 25.—By the <i>Markomania</i> =Hamburg:	
Africans.....	3,787
Nov. 27.—By the <i>Borderer</i> =London:	
Africans.....	8,821
Total for November.....	78,073
Dec. 1.—By the <i>Ottoman</i> =Liverpool:	
George A. Alden, Africans.....	15,386
Reimers & Meyer, Africans.....	23,808
Dec. 1.—By the <i>Columbian</i> =Liverpool:	
Africans.....	32,816
Dec. 5.—By the <i>Pavonia</i> =Liverpool:	
Reimers & Meyer, Africans.....	17,625
Dec. 8.—By the <i>Philadelphian</i> =Liverpool:	
George A. Alden, Africans.....	11,189
Africans.....	39,790
Dec. 13.—By the <i>Roman</i> =Liverpool:	
Reimers & Meyer, Africans.....	5,528
Dec. 16.—By the <i>Catalonia</i> =Liverpool:	
Africans.....	8,326
Dec. 20.—By the <i>Cephalonia</i> =Liverpool:	
Africans.....	4,050
Dec. 20.—By the <i>British Queen</i> =London:	
Africans.....	208
Dec. 21.—By the <i>Cephalonia</i> =Liverpool:	
Reimers & Meyer, Africans.....	57,983
Dec. 23.—By the <i>Kansas</i> =Liverpool:	
George A. Alden, Africans.....	6,374
Africans.....	22,980
Dec. 26.—By the <i>Bostonian</i> =Liverpool:	
Joseph Bannigan, Africans.....	23,459
Dec. 26.—By the <i>Milanese</i> =London:	
George A. Alden, Africans.....	77,058
Dec. 27.—By the <i>Hermann</i> =Antwerp:	
Africans.....	2,176
Dec. 30.—By the <i>Catalonia</i> =Liverpool:	
Africans.....	19,608
Total for December.....	368,364

SOME European manufacturers use, in waterproofing, what may be called "mordants," which are divided into two groups: one comprising oxids of alumina, antimony, tin, lead, or zinc, and the other insoluble silicates. In the former, the alkaline salts of the metal, and in the latter, the alkaline silicates, mix readily with soap solutions. The process requires two baths, the first of soap compounds, the second of metals; the cloth being run successively throughout the two baths, wrung out after each bath, and then washed in warm water. Dyeing is afterwards performed by using the oxids deposited on the cloth as mordants for the coloring matter used.



## RUBBER FAR UP ON THE AMAZON.

THE Dresden *Gummi-Zeitung* publishes the following interesting letter from a German naturalist in Iquitos, who intends to devote himself to the rubber industry:

"I am prompted by the papers you have sent me, which have found their way up the mighty stream to us here in central Iquitos, to communicate with you. My stay in South America is primarily due to my work as a naturalist, in which capacity it has devolved upon me to explore the various milk-juices and resins of the *Euphorbiaceæ* and *Cinnamomum* trees, the latter an especially fine cinnamon species yielding a resin very similar in odor and color to camphire-tree.

"I am preparing at present a small collection of bottles for a German manufacturer, and the task has taken a rather long time, because most of my bottles were destroyed by the gas-pressure. It requires unusual care to send such samples to Europe, and more than once does one find himself standing with empty hands at the grave of his product, to obtain which one had to suffer from innumerable leeches, swarms of mosquitos, and other gangs of bloodsuckers. But realizing that the hitherto neglected species of plants—all of which belong to the great family of trees possessing supreme interest to the rubber industry—deserve a thorough study, I gathered fresh courage and persisted in my visits to the different places of my abode for the sake of carrying on the necessary investigations. But it is natural that I should have lately turned my attention to the commercial side of the question in order to get better returns from my labors, and contemplated the shipping of rubber in larger quantities to manufacturers. From science alone, any more than from art alone, it is impossible to make a living among these uncivilized peoples, particularly since the communication with Europe is restricted to a semi-annual exchange of mail, the exceptions to this rule, even when cholera does not aggravate the difficulties, scarcely affording much help.

"It will give me pleasure to have another sign of life from you in six or seven months from now. Last June a steamer reached our harbor. You can well imagine with what a hurrah, 'Vive la Patria,' and 'Vive la Republica,' we hailed it. It was the first time that a bird of passage coming from the mercantile nests of the South lost itself within the friendly shores of the upper Amazon, unconscious of the fine opportunity which it had (at that time of the year) of penetrating with equal ease further up stream, to the mouth of Pachitla. But the fact is enough that at last so great a question of modern times was settled in practice, all the writings about it having been of very little use. Our present world is devoted to the real and positive, and this occurrence in the outermost part of the rubber-district, where one imagines the world to be nailed up and enclosed, will now interest many a manufacturer and rubber-man, since we are now, with all the extraordinary natural resources of our region, in contact with the world's markets.

"The Europeans have but a shadowy idea of the great dimensions of South America, in whose regions immeasurable tropical forests glitter which might be called the gigantic aquarium of the world's commerce with equal propriety to that with which Alexander von Humboldt called the province of Loreto the dining-hall of the world. A more elaborate scientific description of this luxurious part of Peru will shortly be available through my reports to the geographical institute of Gotha on my activity during my work in the employ of the Peruvian government, which terminated with a change of the presidency at Lima. Since that change I have worked for private enterprises, and will be glad to serve in the future the rubber interests of Germany."

## THE RUBBER PRODUCTION OF BOLIVIA.

THERE need be no reason for wonder at the lack of definite information concerning the extent of the rubber production of Bolivia, when it is considered that even the extent in area of that republic is a matter of doubt. Cargoes are transported by mules, donkeys, and llamas, each class of animals carrying a different average weight, so that even a count of the burdens carried would not afford a basis for an estimate of the rubber produced. The report of the minister of finance and industry of Bolivia for 1891 reports 35,000 quintals of rubber exported from that country via the river Purús, but whether quintals of 100 pounds or 100 kilograms are meant is not stated. But there was exported, in addition, the rubber sent down the Beni, and thence by the Madeira to the Amazon, and the exports from the State of Santa Cruz, by the Paraguay river. Steam navigation has been introduced on the Beni river for 130 miles, on the Madre de Dios for 200 miles, and on the Mamoré for 300 miles, touching at several important rubber camps, and conveying the product to the Madeira, toward which all these streams converge. Indian canoes proceed up these rivers much further, and up their tributaries, swelling the amount of rubber gathered for export by the Madeira. It would be of much interest to know how large a production finds its way to market from these sources.

"A CORRESPONDENT of *The Druggist's Circular and Chemical Gazette* writes from Merrimac, Mass.: "Having a prescription for suppositories, and nothing but an old set of tin molds from which it was next to impossible to remove the suppositories after they were cold, I looked about the store for a better arrangement, and found it in black rubber nipples—those that go on over the top of the bottle. The hole in the end was closed by a small piece of court plaster; the nipples were then supported in a piece of tin with holes punched to receive them, and placed in a dish of ice-water to cool. The suppositories, after hardening, were removed by turning the nipples down away from them. When the nipple is full, the mass weighs about eighty grains; the size can be regulated in filling. This may be an old trick, but I have never seen it before, and if it is it is the cheapest and best I have ever seen."

THE Reading (Pa.) Traction Co. are having a new car-house built by the Berlin Iron Bridge Co. (East Berlin, Conn.), which is a hint to rubber-manufacturers that this enterprising firm are making bids for buildings all over the country.



RUBBER-TIRED JAUNTING-CAR.

Shown at the Madison Square Garden Bicycle Show by the American Dunlop Tire Co.

## RUBBER IN THE DENTAL PROFESSION.

*By Loie Vorrath.*

**I**NDIA-RUBBER is of almost incalculable value to the dental profession. For general utility there is nothing that could take its place. From vulcanite plates down to the ordinary rubber ball for air- and water-syringes, it comes into constant use. For the plates of artificial teeth it is fast replacing all other substances employed. Gold is much less agreeable to the fine tissues of the mouth, while aluminum and celluloid are growing more and more unpopular. Though similar in appearance to vulcanite celluloid is inferior in every respect, besides being no cheaper, and it is now little used.

The rubber used in vulcanite plates comes in thick sheets about  $2\frac{1}{2}$  inches wide by five inches long. It comes in innumerable colors,—pure white, pink, dark and light brown, black, dark and light red, maroon, dark and light orange. Red is chiefly used, vermilion and red oxid of mercury being used as coloring matter; but black is the strongest. Vulcanite is even used now, where gold plates are made, for mounting the teeth.

The process of vulcanization of soft rubber was discovered by Charles Goodyear, but it was further discovered, either by Nelson Goodyear or by Austin G. Day, that by increasing the quantity of sulphur and raising the temperature during vulcanization quite a new and different product was obtained, to which the name of hard rubber, or vulcanite, was given. All rubber used in dentistry is vulcanized to a greater or less extent. The semi-hard rubber contains about 25 per cent. of sulphur and the

temperature for vulcanizing is between  $250^{\circ}$  and  $300^{\circ}$  F. Vulcanite or hard rubber contains 50 to 100 per cent. of sulphur, and is vulcanized at  $300^{\circ}$  or  $320^{\circ}$  F.

The hardness of vulcanite depends upon the quantity of sulphur mixed with it. Both hard and semi-hard rubber are colored by adding various pigments. The coloring matter has little effect in the



DAVIS DENTAL VULCANIZER.  
[With Gas-Burner.]

vulcanizing and tends to lessen the strength and adulterates the product. Vulcanizing is done at a pressure of 100 pounds to the square inch, and a vulcanizer exploding on the ground floor has been known to shoot upward through the ceilings of several floors.

About eighty minutes are required to make a vulcanite plate, twenty minutes of which are given to getting up of steam in the vulcanizer to reach the vulcanizing point of  $320^{\circ}$  F. The raw rubber is softened either by dry heat or in hot water, and is then packed in the case. The case is invested in plaster of Paris and put into boiling water; the flask is bolted together in order to compress the contents as solidly as possible, and is then put into the vulcanizer. It is left there exactly one hour, after which it is completely vulcanized. Vulcanizers used in

dental laboratories are made to hold from one to three flasks at a time. They are made of quarter-inch copper, hammered out and seamless, and there are now about fifty different makes.



DAVIS DENTAL VULCANIZER.  
[With Oil-Burner.]

strong and light and in the second place it is, when properly vulcanized, more cleanly. Another excellent feature is its cheapness. There was a time when all plates were made of gold, but when rubber was introduced it completely revolutionized the practice of the profession.

Of course, much care must be exercised in the process of vulcanizing, as improperly vulcanized rubber has the bad quality of porosity.

Rubber-dam, also, must not be overlooked in taking a survey of this extensive field. It is almost as indispensable as vulcanite itself, if not more so. It is used, as the name implies, as a dam, to keep the saliva from entering the cavity of the tooth during the process of filling. Dentists use two kinds of dam: one, which is very light, on the patients, and the other, which is very heavy, on the under portion of the bellows in the laboratories.

A RADICAL change in the manner of putting up syringes and goods of that kind has been noted during the past year or two. The paper boxes that were wont to enclose these goods have almost entirely disappeared, and in their place have come the handsome wooden boxes. Nine-tenths of this trade is supplied by a Philadelphia house—Henry Ship & Co.—who make a specialty of these goods.

THE California Rubber Cement Co., Knoxville, Tenn., write that their cement is having a very large sale. They are putting up 136 dozen bottles a day and appointing agents all through the country.

The plate, after vulcanizing, is scraped and then sandpapered. Next it is treated with a mixture of oil and rotten stone, after which the final polish is put on with prepared chalk.

Thus it will be seen that rubber plays a highly important part in the practice of dental surgery. It is the almost universal base for artificial teeth, and in the case of a fractured jaw it is employed for the unique purpose of making an interdental splint. A great many dentists' instruments are made with rubber handles, and the points for polishing the teeth are made of a mixture of rubber and corundum.

So far as plates for artificial teeth are concerned, the advantages of rubber over porcelain and gold are such as to make it a question of a very short time when it will be the only substance employed for the purpose. In the first place it is both

## TRADE AND PERSONAL NOTES.

THE incorporation is reported, at Montclair, N. J., of the Williams Rubber Co., with \$50,000 capital, of which \$16,000 has been paid in. The company will manufacture mackintoshes and deal in general merchandise, the business to be carried on in New York city and Montclair. The incorporators are: Henry B. Williams, N. F. Sprague, E. A. St. John, and A. D. Bloodgood,—all of Brooklyn, N. Y.,—and George Crittenden, of Montclair.

—The Gutta Percha and Rubber Manufacturing Co. (New York) have opened a branch at Nos. 91-93 Front street, Portland, Oregon, under the management of Jules H. Spadone and William S. Hunnewell,—the latter until latterly connected with the company's Chicago branch, with headquarters at Butte City, Montana.

—The Indianapolis Rubber Co. have purchased, for \$11,500, the factory which they have occupied for the past year in the manufacture of bicycle-tires and other rubber goods. The making of a permanent investment in real estate is regarded as proof that the company's venture has proved successful.

—The incorporation is reported, at St. Louis, Mo., of the Mound City Duck and Rubber Co., with \$25,000 capital, of which four-fifths have been paid in. The incorporators are: William Rowe (195 shares), Julius Gaitzsch (50 shares), and August Pitt (5 shares).

—The suit of Joseph Fielden against the United States Rubber Co., at New Brunswick, N. J., for damage for the loss of his hands, was settled by the payment of \$3000 by the company, with \$300 for counsel fees and expenses. The accident was sustained while Fielden was at work in one of the company's factories.

—After the 15th of this month Mr. Herman Reimers, of the firm of Reimers & Meyer, rubber importers, will be located permanently in New York. The Boston office will be in charge of Mr. C. H. Arnold, who is well known to the rubber-manufacturers of the east, the office being at No. 150 Franklin street as heretofore.

—Owing to internal dissensions, the Goodyear Mechanical Rubber Co., New York, have been put into the hands of a temporary receiver. Alfred R. Page is the receiver, and he has been in charge since January 29. Pending the adjustment of the difficulties, no full statement of the position of the company can be made. There will be no interruption in the business of the company, and as soon as an adjustment is reached the manufacture of rubber tires will be added to the lines pursued by the company.

—"Gee Whiz" is the name of a new bicycle tire upon the market by the New York Belting and Packing Co., Ltd., No. 15 Park row, New York city, and shown for the first time in the company's exhibit in charge of Mr. L. F. Stillwell at the recent New York cycle show. It is a clincher tire on wood rim and weighs under seven pounds to the pair. The "Gee Whiz" will no doubt become quite as popular as the celebrated French Michelin and "Whippet" tires made by the New York Belting and Packing Co., Ltd.

—It is reported that the suit of the Boston Rubber Shoe Co. against the Hall Rubber Boot Co. for royalties on rubber-lined boots has been settled. What the terms of this settlement are has not been made public.

—THE INDIA RUBBER WORLD is indebted to Messrs. Betts & Robinson and also to Messrs. Earle Brothers for the annual statistics of India-rubber imports into the United States, published in their usual style.

—The Home Rubber Co. (Trenton, N. J.) are fitting up new and handsome offices for factory use.

—The roof of the Meyer Rubber Co.'s boiler-house (New Brunswick, N. J.) is to be raised 11½ feet, and the three boilers now in use will be replaced by new ones. One new boiler will be placed in position before the old ones are taken out, so that there will be no stoppage of work.

—William Yerdon, of hose-band fame, has erected a new four-story factory 50×120 feet in dimensions. It is fitted with new and improved machinery and is situated in the town of Fort Plain, N. Y.

—Leach's rubber store, Boylston street, Boston, has just added a custom department to its other features. This department will have a capacity of about 100 mackintoshes a week. C. H. Atwood has been admitted as partner to the company owning this store.

—During the past three years nearly 4,000,000 pairs of the Boston Rubber Shoe Co.'s "Storm slippers" have been sold, which is a most remarkable record.

—Lee Straus, wholesale dealer in rubber and leather goods at Richmond, Va., advises THE INDIA RUBBER WORLD of his removal to No. 1315 East Main street, where large and spacious four-story warehouses have been secured, with increased facilities in other respects.

—The sheriff of Bucks county, Pa., who had advertised a public sale, for January 23, of the property of the Goodyear Vulcanite Co., at Morrisville, Pa., wrote to THE INDIA RUBBER WORLD on January 25 announcing a satisfactory settlement of the company's troubles, rendering the sale unnecessary.

—Thomas Robins, Jr., has been elected secretary of the Manhattan Rubber Manufacturing Co. (New York). Mr. Robins has been more or less in the rubber business for a number of years, being the inventor of some specialties in belts and other goods that have had a large sale.

—The Missouri Rubber Co. (St. Louis) have decided to discontinue business after the first of the month. The officers of the company have attended to the selling, spending most of their time on the road. They will make connections with other rubber concerns, and will take their trade with them. Their reason for dissolution is that they had not sufficient capital to increase their business as they wished. A. S. Johnson, late of this company, has accepted a position with the Chicago Rubber Clothing Co. as traveling salesman.

—It is reported that all the able-bodied men in Naugatuck, Conn., are at work, which speaks well for the rubber boot-and-shoe business, as that is the chief industry of the town.

—At the recent annual meeting of the Rubber Manufacturers' Mutual Insurance Co. (Boston) E. S. Converse was re-elected president; B. F. Taft, vice-president and treasurer, and Benjamin Taft, assistant treasurer and secretary. The directors are E. S. Converse, H. C. Morse, Joseph Banigan, Wheeler Cable, George H. Hood, O. H. Sampson, H. L. Hotchkiss, E. B. Page, James B. Forsyth, B. F. Taft, R. Batcheller, George F. Hodgman, Marcus Beebe, Benjamin Taft, and A. W. Clapp.

—Alfred Hale & Co., Boston, have removed to No. 26 School street, two doors below their old store, and have an exceedingly attractive arrangement of goods in their new place.

—One statement of the economies in the rubber-shoe trade resulting from the organization of the United States Rubber Co. estimates the saving in rent and clerical salaries in Boston alone at \$60,000 or more per year. Proportionate savings have been made in other large cities.



## THE RUBBER-TIRE TRADE.

THE Providence (R. I.) Tire Co., incorporated under the laws of Maine December 21, seem to have made a good beginning. At the New York cycle-show they secured good orders from bicycle-manufacturers for their Providence double inner-tube tire, and also from carriage-manufacturers. The capital of the corporation is \$100,000; the location is at No. 33 Eddy street, Providence; the officers are Orion W. Birch, president, and E. A. Godding, treasurer. The latter retires from the Providence Cycle Co.—large retailers—to devote his entire energy to the new concern, and is succeeded in his old position by W. G. Rankin.

—Manager Barnes, of the Eastern Rubber Manufacturing Co. (Trenton, N. J.), is quoted as saying that the concern booked orders for tires at the recent Madison Square Garden cycle-show to the amount of \$75,000. Incidentally it is reported that a large addition to the company's buildings is in contemplation, on account of the prospective growth of business in tires.

—Wilson, Myers & Co. (New York), bicycle-manufacturers, have been incorporated as the Wilson-Myers Co., with \$100,000 capital. They use tires from the Columbia Rubber Works Co. and Phelps, Dingle & Co.

—The rubber-manufacturers enrolled at the fourth annual bicycle-show at Philadelphia, which closed on February 3, were the Newton Rubber Co.; New York Belting and Packing Co., Limited; Boston Woven Hose and Rubber Co.; Eastern Rubber Manufacturing Co.; Elastic Tip Co.; Codman & Shurtleff; and the Columbia Rubber Works Co. Morgan & Wright and the Pope Manufacturing Co.—both large manufacturers of tires—were also well represented.

—The tire guarantee of the New York Belting and Packing Co., Limited, is a most artistic piece of work. It is gotten up very much like a handsome stock certificate, printed on fine bond paper, and adorned with a big blue seal of the company. The guarantee reads as follows:

"We guarantee our tires to be perfect in material and manufacture and will replace them or any of their parts which, upon examination by us, prove to be defective. Tires that are worn out or are rendered unserviceable by accident or misuse will not be replaced. Tires of our make that are punctured during the period of the guarantee will, if expressed direct to us charges prepaid, be repaired free of cost, provided repairing will make them serviceable. No tires will be received unless freight is prepaid but, such charges will be refunded where tires come under the guarantee."

## TRADE PUBLICATIONS.

A VERY neat fourteen-page pamphlet is sent out by the Toledo Rubber Co. as an explanatory catalogue of their goods. The letter-press is printed in blue and the cuts with which it is adorned in maroon. It shows mackintoshes, leggings, druggists'

sundries, and sporting goods, with a list of the general rubber goods which they carry in stock.

—The American Tubing and Webbing Co. (Providence, R. I.) send out a neatly-arranged six-page price-list of their flexible tubing for various purposes. It covers gas stoves, tan, drop-light, cigar-lighter, elevator, flexible, speaking-, and carriage-tubing, and has cuts of the specialties controlled by the company.

—C. S. Knowles, No. 7 Arch street, Boston, sends out with the first of the year Catalogue No. 3 of India-rubber goods for mechanical purposes. The catalogue is adorned with the familiar autograph of the proprietor and each of the 27 pages, showing mechanical goods of all kinds, is signed with the same name in autograph.

—The Cleveland Supply Co.'s new pocket-size "Hose and Sundries" reference-book for 1894 is something different from any other publication up to date. It contains engravings of a variety of goods, with price-lists of the same, and all dealers who have seen pronounce it useful and convenient.

—"A Set of Harness for the Wind" is the title of the new illustrated catalogue of tires issued by the American Dunlop Tire Co., Nos. 504-506 West Fourteenth street, New York. While devoted to "Pneumatic Tires in General," attention is given to the "Dunlop Detachable in Particular." This tire is meant for use on a variety of other vehicles, as well as for bicycles.

## INDIVIDUAL MENTION.

A RECENT visitor to the offices of THE INDIA RUBBER WORLD was Mr. Carlos R. L. Findlay, of Virginia, who sailed from New York on the *Orizaba*, on January 27, for Mexico, intending to make a thorough study of the practicability of introducing American capital in rubber-culture in Oaxaca, Chiapas, and adjacent States.

—Mr. R. S. Pierce, secretary of the Cleveland Rubber Works, was formerly a successful newspaper-man in the same city—a fact which insures a pleasant interview whenever a reporter is assigned to visit the establishment.

—President Banigan, of the United States Rubber Co., has been spending some time at Lakewood, N. J., with his wife, who has been suffering from ill-health.

—President George A. Lewis, of the Wales-Goodyear Co., and his wife expect to start to-day for Aiken, S. C., where Mr. Lewis will take a much-needed rest.

—The Hon. E. S. Converse and wife are on a trip to California.

—Mr. Emmett A. Saunders, who has become connected with the L. Candee Co., has changed his residence from Naugatuck, Conn., to New Haven, having rented in the latter city the "Governor English" house, No. 598 Chapel street.

## REVIEW OF THE RUBBER MARKET.

THERE has been but little improvement in the rubber situation since our last writing. Owing to the operation of general causes, affecting industry and trade in general, the rubber market has been extremely dull. There has been so little buying that an accumulation of stocks has resulted which could not but bring prices down; and our quotations below will show a decline in the prices of both fine and coarse Pará rubber. In spite of this decline, however, manufacturers abstain from making any purchases. There is

no incentive to "stock up," as they are receiving but small orders, and the business outlook is far from bright. They anticipate a still further decline in prices, and prefer to wait.

The boot and shoe trade has fallen off since the opening of the new year, and while the mechanical and clothing people are buying, their purchases are all in quantities not exceeding a few tons. The rubber brokers say that though they are kept rather busy, very little business is done. Men who buy twenty tons at a time do not care now to buy more than two or three.

Nor is the prospect for next month at all encouraging. The spring trade is seriously affected in every line by the uncertainty as to the tariff changes, the confused condition of the silver market, and the Treasury situation. The promised and hoped-for revival of trade shows no signs of appearing. Nobody sees the end of the prevailing business depression. The rubber men expect nothing better than a hand-to-mouth existence for some time to come. If they do not feel particularly depressed, it is because the condition of the rubber market presents nothing peculiar, and simply reflects the more general stagnation of trade. Aside perhaps from the weather, which has not favored the business of the rubber manufacturers, there has been nothing especial to depress the trade.

The statistical position of Pará rubber in New York and elsewhere is as follows:

	Fine and medium.	Coarse.	Total.	Totals 1892.
Stock, December 31, 1893.....	588	51	639	= 835
Arrivals, January, 1894.....	1189	386	1575	= 1515
Aggregating .....	1777	437	2214	= 2350
Deliveries, January.....	940	345	1285	= 1341
Stock, January 31.....	837	92	929	= 1009
			1894.	1893.
Stock in England, January 31 .....			874	587
Deliveries in England, January .....			752	666
Pará receipts, January .....			2370	1495
Stock in Pará, January 31 .....			1377	665
			1894.	1893.
World's supply, January 31 .....			4160	3115
[Excluding caucho.]				
Pará receipts, June-January.....			12,715	11,110
[Six months of crop year.]				

## PRICES FOR JANUARY.

	Fine.	Coarse.	Fine.	Coarse.	Fine.	Coarse.
First .....	67	47	66	47½	63	43
Highest.....	67	47	78	55	65	45
Lowest.....	66	44½	66	47½	63	43
Last.....	66	46	78	55	63½	44

The latest quotations in the New York market are:

Pará, fine, new.....	66@67	Sierra Leone.....	22@36
Pará, fine, old.....	70@73	Benguela.....	45@46
Pará, coarse, new.....	45@50	Kongo Ball.....	35@41
Pará, coarse, old.....	none here	Small Ball.....	32@35
Caucho (Peruvian) strip.....	47@48	Flake, Ord and Lump.....	26@28
Caucho (Peruvian) ball.....	51@52	Accra Flake.....	14@15
Mangabeira, sheet.....	33@38	Madagascar, pinky.....	55@60
Esmeralda, sausage.....	48@49	Madagascar, black.....	38@41
Guayaquil, strip.....	30@40	Borneo.....	26@42
Nicaragua, scrap.....	45@46	Gutta-percha, fine grade.....	1.30
Nicaragua, sheet.....	43@44	Gutta-percha, medium.....	1.00
Thimbles.....	36½@37½	Gutta-percha, hard white.....	85
Tongues.....	32@36	Gutta-percha, lower sorts, nominal.	

In regard to the financial situation Messrs. Simpson & Beers, brokers in crude India-rubber and commercial paper (New York), advise us:

"Our bank surplus further increased during January about \$30,000,000; the last bank statement of the month showing the unprecedented amount of \$109,000,000, in excess of legal reserves. First-class commercial paper has been scarce and eagerly sought for by city and out-of-town banks, at low rates, —say 4@4½ per cent. for endorsed receivables, and 5@5½ per cent. for prime single-name, all three to six months to run. A continuance of abundant money is expected for many months yet."

## THE TRADING IN RUBBER STOCKS.

THE quotations which follow represent the daily transactions in Rubber Stocks on the New York Stock Exchange for each business day since the last report printed in this journal:

DATES.	Shares.	COMMON.		Shares.	PREFERRED.	
		High.	Low.		High.	Low.
January 11..	100	40	40	....	....	....
January 12..	100	40	40	....	....	....
January 13..	865	39½	39½	....	....	....
January 15..	572	38	36¾	480	80	80
January 16..	200	39½	38½	150	83	83
January 17..	....	....	....	105	84	84
January 18..	3	38	38	47	84	82
January 19..	100	39¾	39¾	....	....	....
January 20..	....	....	....	1	15	85
January 22..	280	38	38	....	....	....
January 23..	....	....	....	10	83	83
January 24..	300	38	36	100	80	80
January 25..	350	38	36¼	....	....	....
January 26..	40	38	38	127	80½	80½
January 27..	....	....	....	....	....	....
January 29..	....	....	....	....	....	....
January 30..	6	36½	36½	5	79¾	79¾
January 31..	....	....	....	....	....	....
February 1..	....	....	....	100	83½	83½
February 2..	....	....	....	....	....	....
February 3..	....	....	....	100	83	83
February 5..	....	....	....	21	84	81½
February 6..	....	....	....	20	84	84
February 7..	400	39	38	....	....	....
February 8..	....	....	....	50	80	80
February 9..	100	38	38	....	....	....
February 10..	....	....	....	....	....	....
Novemb'r, 1892	31,208	44	38¾	....	....	....
December.....	15,943	48	39	2,607	99	94½
January, 1893.	9,604	47¾	42½	5,521	99	94
February.....	7,024	46¾	43	1,333	97	92½
March.....	30,438	58¾	42	2,938	99	93
April.....	25,625	60½	53½	3,251	99½	94¾
May.....	24,999	57½	33	4,835	91	80
June.....	5,474	45½	34½	2,323	83	74
July.....	2,774	38¾	25	1,504	77	65
August.....	3,525	29	17	1,943	68	50
September.....	3,191	38	29	778	79	70
October.....	4,977	45	29¼	2,116	89½	75
November.....	1,031	40¼	38	504	89	83
December.....	5,084	47¾	39¼	1,058	91½	84
January, 1894.	4,083	40½	36¼	1,447	85	79¾

## AFRICAN RUBBER—LIVERPOOL.

TO THE EDITOR OF THE INDIA RUBBER WORLD: The month of January shows very little alteration in the prices of African and medium grades generally. The market all through has been quiet but fairly steady, with the usual volume of business passing from day to day. Good kinds, with the exception of fine Accra sheet, have been in demand, and full prices are still obtainable. The sales include Benguela Niggers, c. i. f. Liverpool at 1/10¼; Addah Niggers, 1/8¼; Congo Ball, 1/7¼ @ 1/8½, according to quality; Old Calabar, 1/2 @ 1/4, according to quality; Fine Cameroon Clusters, 1/9¼; Batanga Ball, 1/5½; Gambia Niggers, 2/1½ @ 2/2; prime Siberia Leone Twists, 1/9; prime Accra Biscuits, spot and to arrive, 1/11½ @ 1/11¼ @ 2/-; Madagascar Niggers, 1/3¼, soft Cape Coast and Saltpond, 1/1; Accra Paste, 7 d, and other kinds at proportionate prices. The present quotations are as follows:

Soft Liberian.....	1/1
Soft Liberian (pasty).....	7 @ 7½
Hard Liberian.....	1/3
Accra, Saltpond and Cape Coast Biscuits of fair quality.....	1/10½ @ 1/11
Accra Biscuits, best quality.....	1/11¼ @ 2/-
Addah Niggers.....	1/8½ @ 1/9
Prime selected Sierra Leone Niggers.....	1/5½ @ 1/6½

Grand Bassam and Assinee	1/5	@ 1/6
Prime Gambia Niggers	2 1/2	@ 2/2
Mixed Cameroon	1/6	@ 1/7
Large Cameroon or Batanga Ball	1/5	@ 1/5 1/2
Best Kongo Ball	1/8 1/2	
Gaboon Ball or second Kongo Ball	1/7	@ 1/7 1/2
Thimbles	1/6 1/4	@ 1/6 1/2
Flake	1/1	
Lump Flake	1/1 1/2	
Prime Black Manoh Twists	2/4	
Old Calabar	1/3 1/2	@ 1/4
Loanda Niggers	2/6	
Benguela Niggers c. i. f. New York	1/10 1/2	

The London market has also been steady, but fairly active, without quotable change. Sales of Madagascar Niggers have been made at 1/2, 1/2 1/2, 1/2 3/4, and 1/3, and good quality at 1/5.

We append a statement of Liverpool rubber statistics for the month of January.

WM. SYMINGTON & CO.

Liverpool, January 31, 1894.

#### LIVERPOOL RUBBER STATISTICS.

	Pará grades.	Africans.
Stocks, December 30 (pounds)	1,776,320	1,346,240
Arrivals during January	1,865,920	528,640
	3,642,240	1,874,880
Stocks, January 31	1,957,760	1,352,960
Deliveries during January	1,684,480	521,920
As against deliveries during December	1,444,800	916,160

The stock of Pará rubber January 31 consisted of :

	Fine.	Entre-fine.	Negroheads.	Total.
First hands	573	76	62	711 tons.
Second hands	147	5	11	163 "
Total	720	81	73	874 "

Stock of Ceará rubber on January 31, 721 bales.

#### IMPORTS OF CENTRALS.

BELOW will be found in detail the imports at New York, during January, 1894, of India-rubber from Mexico, Central America, and South America, other than Pará grades :

JAN. 1.—By the <i>Newport</i> =Colon :	
J. M. Ceballos & Co	5,097
Isaac Brandon Brothers	3,475
Munoz & Esprella	2,500
Hoadley & Co	2,384
Hirzel, Feltmann & Co	2,200
H. Marquardt & Co	2,191
To Order	2,500
Jacob Balz	1,264
R. Samper	1,037
G. Pardo & Co	736
F. Probat & Co	418
C. Roldan & Van Sichel	86
Total	25,478

JAN. 2.—By the <i>New Orleans</i> =New Orleans :	
Earle Brothers	2,500
Crossman & Brother	10,000
To Order	5,000
Cerf, Hirsch & Co	5,000
Total	30,200

JAN. 3.—By the <i>Orizaba</i> =Vera Cruz :	
Theo. Hermann	150
Louis Monjo & Co	150
Marquardt & Co	500
Total	800

JAN. 7.—By the <i>Athos</i> =Cartagena :	
Pim, Forwood & Co. (for London)	7,000
W. R. Grace & Co	900
Total	7,900

JAN. 7.—By the <i>Miranda</i> =Greytown, and other ports :	
A. S. Lascelles & Co	400
Eggers & Heinlein	16,000
Andreas & Co	3,800
G. Amsinck & Co	1,800
Jacob Balz	300

R. Mandell & Co	450
A. S. Lascelles & Co	300
Total	22,750
JAN. 10.—By the <i>Columbia</i> =Colon :	
C. Roland & Van Sichel	2,825
H. W. Peabody & Co	1,800
New York Commercial Co	1,500
Sears & Co	1,000
A. Santos & Co	420
A. N. Capens & Sons	280
Piza, Nephews & Co	5,578
Total	13,112

JAN. 13.—By the <i>Cuidad Condal</i> =New Orleans :	
P. Harmony's Nephew & Co	200

JAN. 16.—By the <i>Excelsior</i> =New Orleans :	
Earle Brothers	8,000

JAN. 16.—By the <i>Bergensern</i> =Cartagena :	
W. R. Grace & Co	2,200

JAN. 22.—By the <i>City of Pará</i> =Colon :	
Bock & Co	4,035
Munoz & Esprella	3,266
C. Roldan & Van Sichel	3,374
Lanman & Kemp	3,065
Hoadley & Co	1,352
R. Samper	1,224
G. Amsinck & Co	37,770
J. M. Ceballos & Co	8,875
New York Commercial Co	6,000
Flint & Co	8,037
W. R. Grace & Co	5,000
A. Santos & Co	7,145
Hirzel, Feltmann & Co	7,985
Total	69,607

JAN. 24.—By the <i>New Orleans</i> =New Orleans :	
A. N. Rotholz	2,000
Cerf, Hirsch & Co	12,000
Crossman & Bros	10,000
Earle Brothers	1,000
Total	25,000

JAN. 24.—By the <i>Saratoga</i> =Vera Cruz :	
Theo. Hermann	200

#### IMPORTS FROM PARÁ.

THE imports in detail of rubber direct from Pará at the port of New York, since our last report, have been as follows, all quantities being expressed in pounds :

January 15.—By the steamer <i>Paraense</i> , from Pará and Manáos :					
	Fine.	Medium.	Coarse.	Caucho.	Totals.
Joseph Banigan	184,700	31,400	60,900	25,900	302,900
Boston Rubber Shoe Co.	144,400	22,400	50,900	29,800	247,500
Reimers & Meyer	5,100		37,700	21,100	63,900
Shipton Green	7,000	800	2,900		10,700
Total	341,200	54,600	152,400	76,800	625,000

January 17.—By the steamer <i>Waverley</i> , from Pará :					
New York Commercial Co	278,200	34,600	61,600	53,000	427,400
Joseph Banigan	37,000	6,100	25,800	1,100	70,000
Boston Rubber Shoe Co.	37,000	6,100	25,800	1,100	70,000
Reimers & Meyer			3,600		3,600
Total	352,200	46,800	116,800	55,200	571,000

January 26.—By the steamer <i>Gregory</i> , from Pará and Manáos :					
Boston Rubber Shoe Co.	189,900	30,000	67,700	600	288,200
Joseph Banigan	142,100	22,100	59,100	300	223,600
Reimers & Meyer	80,700	19,600	41,100		141,400
New York Commercial Co	32,900	6,700	16,300	500	56,400
Hagemeyer & Brunn	17,300	3,600	700		21,600
Shipton Green	9,500	1,600	6,000		17,100
W. R. Grace & Co	7,500	1,100	6,000		14,600
G. Amsinck & Co	7,600	3,900	2,200	200	13,900
For Export	5,700	1,400	2,100		9,200
Total	493,200	90,000	201,200	1,600	786,000

January Imports from Pará	3,750,000
December Imports	3,226,200
November Imports	1,416,000
October Imports	1,661,600
September Imports	757,200
August Imports	914,100
July Imports	579,200
June Imports	1,955,915
May Imports	1,307,600

J. Agostini	400
Total	600

JAN. 25.—By the <i>Andes</i> =Cartagena, and other ports :	
D. A. De Lima & Co	1,200
Schulz & Ruckgaber	500
Munoz & Esprella (Greytown)	3,000
G. Amsinck & Co. (Greytown)	3,200
A. F. Strout (Greytown)	5,000
Fabien & Mendy (Greytown)	900
Ellinger Bros (Greytown)	600
Total	14,400

JAN. 26.—By the <i>El Paso</i> =New Orleans :	
Earle Brothers	4,000

Total Imports for January, 1891	214,247
Total for December, 1893	218,047
Total for November	251,676
Total for October	235,321
Total for September	143,384
Total for August	134,636
Total for July	263,526
Total for June	190,921
Total for May	267,483
Total for April	200,389
Total for March	277,450
Total for February	244,525
Total for January	222,308

#### NEW ORLEANS.

NOVEMBER.		
	POUNDS.	VALUE.
From Nicaragua	84,394	\$15,625
From Colombia	274	76
Total	84,668	\$15,701

DECEMBER.		
From Nicaragua	58,475	\$18,019
From Colombia	641	384
Total	59,116	\$18,023

JANUARY.		
From British Honduras	262	\$ 68
From Nicaragua	40,713	9,128
From Colombia	812	278
Total	41,787	\$9,474



